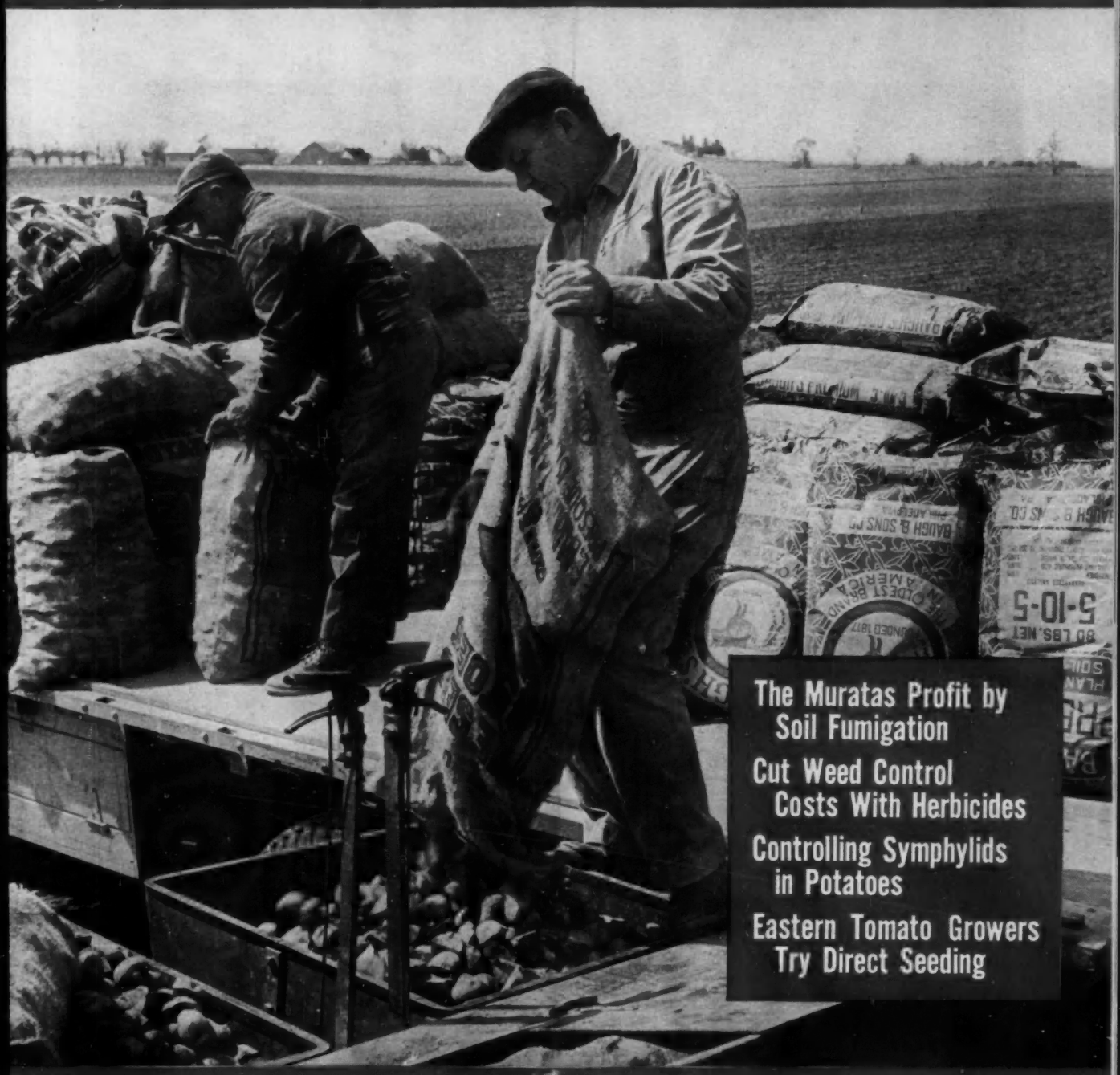
MAY • 1961
25 CENTS

American Vegetable Grower

VARIETIES • CULTURE • PACKING • MARKETING



The Muratas Profit by Soil Fumigation

Cut Weed Control Costs With Herbicides

Controlling Symphylids in Potatoes

Eastern Tomato Growers Try Direct Seeding

Will Machines Harvest This Year's Tomato Crop?

FIRESTONE SHOCK-FORTIFIED CORD

gives extra impact protection!

Independent tractor-tire tests prove it: *Firestone cord bodies are up to 34% stronger than those of other leading tires!*

And farm reports confirm it: Firestone Shock-Fortified cord works *full* time to guard against impact damage, to extend tractor tire life, to reduce costs on all farm jobs. Its proved superiority means Firestones stand up best for retreading, too!

You'll also like exclusive Firestone Rubber-XF, new extra-long-wearing tread rubber. You'll like Firestone's Flex-Fortified sidewalls for their protection against cracks and breaks. You'll like the deeper bite and self-cleaning action of Firestone Powerized traction bars. And you'll like Firestone's quick, complete on-the-farm service—the *only* such service that loans you *brand-new* tractor tires to use when yours go in for retreading or repairs! Buy farm-proved Firestones now . . . at your Firestone Dealer, Store or service station. Always a year to pay.

Firestone

FIRST IN FARM TIRE NEEDS

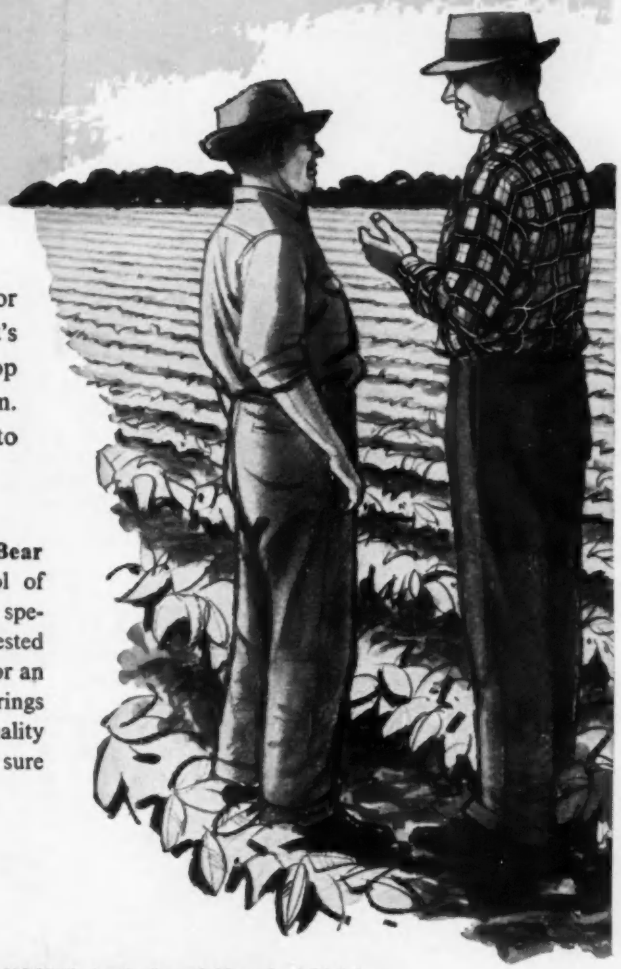
Copyright 1961, The Firestone Tire & Rubber Company

Tune in Eyewitness to History every Friday evening, CBS Television Network

Rancher Audis Kirkpatrick (right) with employee R. B. Montoja of Las Cruces, N. M., says: *"I've got adobe soil and it puts tires to a real test. Just the same, Firestones give me traction and wear I can't beat. My dealer John Lee (left) knows tires inside and out and he's ready with fast service."*

do it right

...Consult your Swift's Crop Advisor Now!



When your crop is at stake, there's no room for halfway pest control measures. That's why it's always a good idea to check with your Swift crop advisor at the first sign of an insect infestation. He will recommend the best control measures to use. It's a free service to you from Swift.

There's a Swift **Gold Bear** pesticide for the control of every insect . . . each is specially formulated with tested and proved ingredients for an effective kill. Swift also brings you a complete line of quality **Gold Bear** herbicides for sure weed control.

Swift
AGRICULTURAL CHEMICAL DIV.

SWIFT & COMPANY, Agricultural Chemical Division
Chicago, Illinois

IRRIGATION

Dollars Do More...

for Row Crop Growers

WITH ▲

WADE RAIN

Sprinkler Irrigation ®

FARM-TESTED

WADE RAIN

Exclusive Features

Save Time... Labor... Water!

MARKET GARDENERS everywhere have learned the yield and profit boosting advantages of WADE RAIN Sprinkler Irrigation. WADE RAIN has the Features that save Time, Labor and Operating Cost. Year after year, these Savings mount up to give you the lowest cost, most satisfactory Sprinkler Irrigation you can own. ACT NOW... put WADE RAIN TO WORK for you this year!

★ **"Pay as You Grow"** Ask your WADE RAIN Dealer

FREE PLANNING FORM "FARM-FACTS" makes it easy to plan . . . Use Coupon

Only WADE RAIN has CONTROLLED Self-Draining

★ POWEROLL with New HIGH WHEELS Now Available • Use Coupon

R.M. WADE & CO. SINCE 1865 ®

Hdqrs.—1919 N. W. Thurman St.

PORTLAND 9, OREGON

COLUMBUS 8, OHIO 119 East Goodale St. • SEATTLE 4, WASH. 532 First Ave. S.

Foreign Sales — Irrigation Development Corp. 260 Madison Ave., New York 16, N.Y.

Send Free "FARM FACTS" and Literature on ☐ Wade Rain Hand-Move ☐ POWEROLL

Name.....

Rt. & Box.....

City.....State..... W72-5-61

American Vegetable Grower

Reg. U.S. Pat. Off.
Commercial Vegetable Grower
Market Growers Journal

VOL. 9 No. 5

MAY, 1961

Cover photograph by Grant Heilman, Lititz, Pa., shows loading a potato planter on the farm of David Nissley in Manheim, Pa. In the foreground is Maurice Nissley, David's brother, who farms nearby; David is in the background.

FEATURES

DEPARTMENTS

E. G. K. MEISTER, *Publisher*
RICHARD T. MEISTER, *Editor*
Managing Editor, E. K. GOULD, *Associate Editors*: H. B. TUKEY, ELDON S. BANTA
R. L. CAROLUS, JOHN CAREW, JOHN A. SCHOENEMANN
Art Director, GEORGE M. ROSS. *Production Manager*, J. S. BENDER.
EDWARD L. MEISTER, *Director of Advertising*

District Advertising Offices

EASTERN ADVERTISING MANAGER: Rod Zilenziger, 415 Lexington Ave., New York 17, N. Y. Phone—Murray Hill 7-1488.

MIDWESTERN ADVERTISING MANAGER: Al Zilenziger, 333 N. Michigan Ave., Chicago 1, Ill.—Phone State 2-7128.

SAN FRANCISCO: McDonald-Thompson, 625 Market St. Phone—Exbrook 7-5377

LOS ANGELES: McDonald-Thompson, 3727 West 6th St. Phone—Dunkirk 7-5391.

SEATTLE: McDonald-Thompson, 1008 Western Ave. Phone—Main 3-3766.

AMERICAN VEGETABLE GROWER is published monthly by American Fruit Grower Publishing Co., Willoughby, Ohio. E. G. K. Meister, Publisher and Chairman of the Board; Edward L. Meister, President; Richard T. Meister, General Manager; Gilbert Meister, Vice-President. Subscription price $1.00 per year in U.S. and possessions; to Canada and other foreign countries $2.00. Single current copies 25c; copies over one year old 75c.

When changing your address, please send us old as well as new; send address label from your last copy; allow 6 weeks for the first copy to reach your new address.

Entered as second-class matter at Post Office at Willoughby, Ohio, under the Act of March 1879. Additional entry at Mount Morris, Illinois.

Postmaster: Please send change of address "Form 3579" to AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

FOR **BROAD SPECTRUM** INSECT CONTROL ON VEGETABLES

depend upon DIAZINON

INSECTICIDES

Aphids
Black bean aphids
Carrot rust flies
Colorado potato beetles
Corn earworms
Diamondback moths
Dipterous leaf miners
Flea beetles
Harlequin cabbage bugs
Imported cabbageworms
Leafhoppers
Mexican bean beetles
Mites
Onion maggots
Onion thrips
Seed corn maggots
Southern potato wireworms
Vinegar flies (Drosophila sp.)

Beets
Broccoli
Cabbage
Cantaloupes
Carrots
Cauliflower
Celery
Collards
Cucumbers
Endive
Kale
Lettuce
Lima beans
Muskmelons
Onions
Parsley
Parsnips
Peppers
Potatoes
Radishes
Snap beans
Spinach
Summer squash
Swiss chard
Tomatoes
Turnips
Turnip tops
Watermelons
Winter squash

Positive control even when problem insects threaten.

Economical because broad spectrum effectiveness permits simplified spray program—reduces number of applications and pesticides needed.

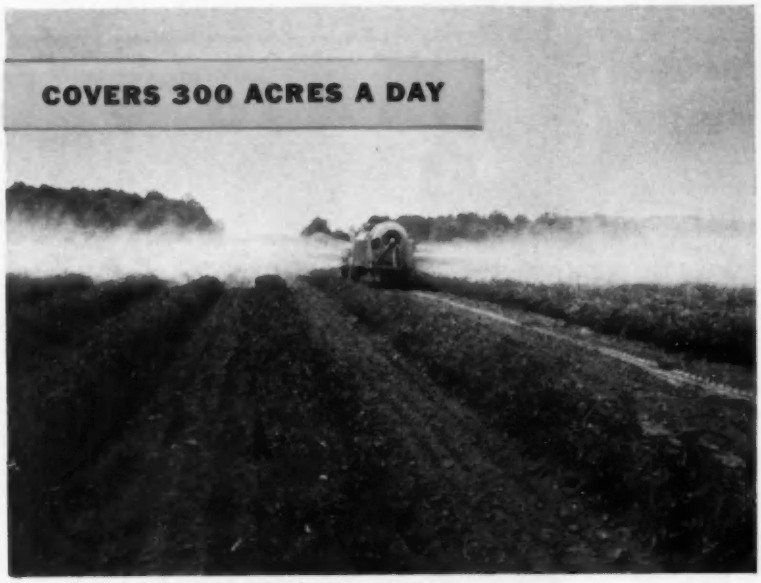
May be applied to within a few days of harvest. One of the safer phosphate insecticides.

Residue tolerance 0.75 ppm

Geigy *ORIGINATORS OF DDT INSECTICIDES*

GEIGY AGRICULTURAL CHEMICALS

Division of Geigy Chemical Corporation • **Saw Mill River Road, Ardsley, N.Y.**



Unretouched photo shows Myers superior two-way coverage.

Myers Exclusive Air Handling and Two-Way Discharge give

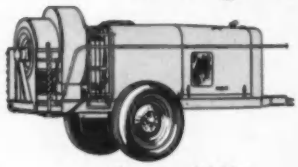
UNMATCHED PROTECTION

Big volume air velocity is delivered directly off fan blades, gives fast, effective coverage over a wide spray swath.

Plants receive complete, protective coverage from top to bottom—even under adverse wind conditions.

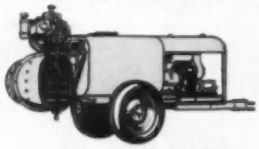
This unmatched protection is not available from other sprayers which depend on the added boost of unpredictable down winds or cross winds to carry their spray pattern.

A model designed for every spraying job

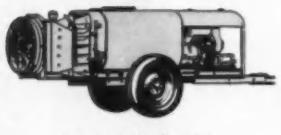


Big, powerful 227
covers 300 acres a day.

Fast, economical 225
covers 250 acres a day.



Compact, efficient F29
covers 100 acres a day.



Smaller, thrifty F24
covers 50 acres a day.

Prove to yourself —ask your Myers sprayer dealer for a demonstration of a Myers air or boom sprayer in your own field—or for more information write to:

Myers **The F. E. Myers & Bro. Co.**
ASHLAND, OHIO KITCHENER, ONTARIO

LETTERS
TO THE EDITOR

Care and Feeding of Migrants

Dear Editor:

Reading so many articles about "Harvest of Shame," I feel I should express my feelings. I hire migrant help and am proud of them. They do a very good job, regardless of what the task may be. We respect and treat our migrant help just as though they were of the family.

During off season (when they work by the hour) we pay our migrants $1 an hour. Along with this hourly rate, these migrant workers get a neat, clean house to live in with gas and gas stove, refrigerator, sink, table, dishes, cooking utensils, bed, bed clothing, hot and cold running water, shower, radio, television, toilet, and electricity, all furnished by us. We're not ashamed to have anyone come and visit and inspect our migrants.

During harvesttime, these men have made as much as $104 per week per man. We take our migrant help shopping every Friday night. Whenever there is a local picnic in the neighborhood, they go with us as though they were of the family. Last (but should have been first), they also are taken to church.

It's too bad that a few so-called "businessmen" who are also using migrant workers set such a poor example that all growers are judged by it.

I don't know of anyone in our area who mistreats or under-pays migrant help. The real grower doesn't need organized labor. It's just the greedy grower who wants everything for himself who needs unions or government law to tell him how to treat his help. Why should all of us be condemned and forced into union help because of a few growers who need to be shown that they *are* their "brother's keeper" regardless of who he is or where he comes from.

Pen Argyl, Pa. James G. Sandt

Our Cover Makes A Hit

Dear Editor:

March issue best yet. Beautiful cover, excellent articles! Keep up the good work.

Clinton, Ind. Theodore F. Nolan

Dear Editor:

This brief note will offer you my best congratulations on the March issue of AMERICAN VEGETABLE GROWER. In my opinion, this is one of the best issues you have published, both from the standpoint of attractiveness and the quality of the information it contains.

La Jolla, Calif. Dr. Thomas W. Whitaker
U.S. Department of Agriculture

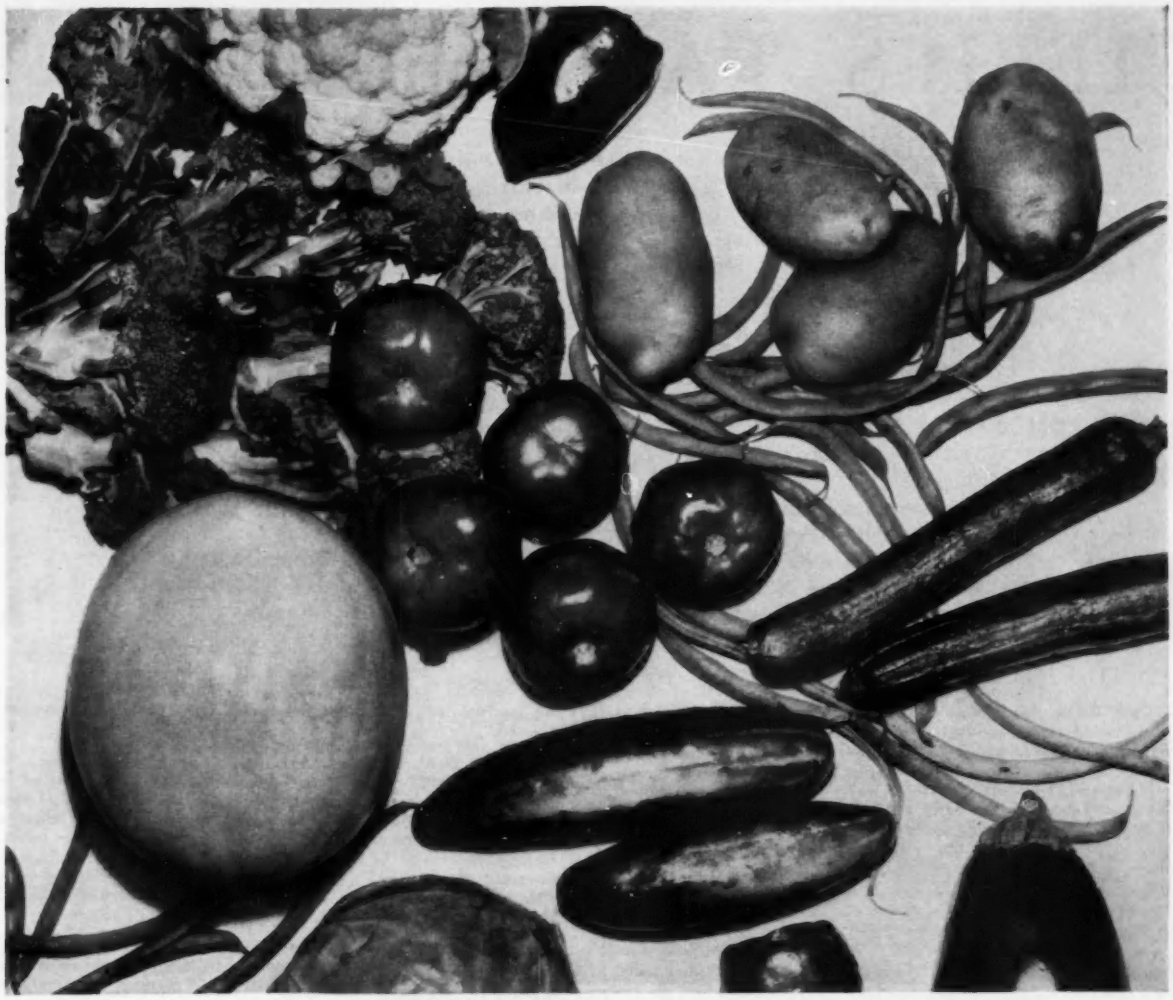
Dear Editor:

I enjoyed the beautiful cover of your last issue showing the harvesting of celery on muck soil.

Is it possible to obtain a copy of this picture for framing?

East Lansing, Mich. Dr. Shigemi Honma
Michigan State University

Every now and then Dame Fortune smiles and everything turns out right. Such was the case with our March issue, from the four-color cover right on through. Wish we could supply copies of the cover for framing, but unfortunately they aren't available.—Ed.



now...use Thiodan® on all these

Broader registration for Thiodan —powerful new insecticide—gives you effective, economical control of aphids and many other important insects.

Thiodan cleans up heavy aphid infestations where other sprays and dusts fail. It outperforms previously available materials; fewer applications give positive, long-lasting control of a wide range of vegetable insect pests.

CROP	TO CONTROL	APPLICATION
Beans	Mexican bean beetle	Up to pod formation
Broccoli Cabbage Cauliflower	Cabbage looper, imported cabbage worm, diamond-back moth larvae, cross-striped cabbage worm	Up to formation of edible parts
Cucumbers, Melons, Squash	Aphids	Up to 14 days prior to harvest
Eggplants, Peppers	Aphids	Up to 7 days prior to harvest
Potatoes	Flea beetle, Colorado potato beetle, leafhoppers, aphids, southern armyworm, green stink bug, potato tuberworm, leaf-footed plant bug	Up to harvest
Tomatoes	Aphids, whitefly, Colorado potato beetle, flea beetle, green stink bug	Up to 7 days prior to harvest

Thiodan is a registered trade-mark of Farbwerke-Hoechst A.G.

Thiodan®

TECHNICAL CHEMICALS DEPT., NIAGARA CHEMICAL DIVISION, FOOD MACHINERY AND CHEMICAL CORPORATION, MIDDLEPORT, N.Y.

JIFFIES PASS the TEST!

Several years ago when we first offered Jiffy-Pots to commercial vegetable growers for starting plants, we were astonished by the favorable reports which we received. We knew they would be useful from experiences which had been reported by florists, but vegetable growers' reports of earlier and greater yields coupled with labor saving were more enthusiastic than we had expected.

Were the reports true?—were they really that useful and practical for commercial vegetable growers?

To find a sure answer to this question, we made arrangements for farm tests of Jiffy culture of several important vegetable crops in different parts of the U. S. Two tests were conducted by universities and two by commercial firms. In all instances accurate records were kept of crop handling, yields, etc.

These tests unanimously confirmed—each in its own way—the practicability of Jiffy-Pots for commerical vegetable culture. Following is a brief description of these tests. If interested in more complete information about them write Jiffy-Pot Company of America. For more information about the use of Jiffy-Pots in vegetable growing, write to Jiffy-Pot Company of America or your local distributor for Tech. Bulletin #10.

GEO. J. BALL, Inc., West Chicago, Ill. A demonstration plot of Jiffy-Planted Tomatoes—variety Urbana—yielded 50% more fruit by weight than Urbana plants flown in from Georgia. Also commercial quantities were harvested 2 weeks earlier on Jiffy-Potted section. Jiffy-Potted Cucumbers produced 3 weeks earlier than direct-seeded. The practical benefit of early yield occurs in connection with the greater availability of help in the early part of the season.

CORNELL. At Cornell University (Ithaca, N.Y.) tests showed consistently greater yields, both early and total, from Jiffy-planted Moreton Hybrid Tomatoes compared with other types of containers, as well as bare root transplants. The Cornell report states, "Using the values obtained in this experiment, one Moreton Hybrid plant would produce Tomatoes worth $0.70 when grown in 3 inch Jiffy-Pots and $0.50 when spacing 2 inches in soil without a pot. For 3000 plants per acre, a total value of $2100 results for the 3 inch Jiffy-Pots compared to $1500 per acre for the 2 inch soil treatment. However, the marketing factor is not included in these figures. Trucks loaded with Tomatoes were lined up outside the market when the small 2 inch soil block treatments ripened whereas buyers were fighting for Tomatoes at the time the earlier, large container treatments ripened."

TEXAS A. & M. Research workers at Texas A. & M. College, in reporting on 1959 Watermelon tests, stated that plants started in 3 inch Jiffy-Pots protected by hot tents yielded 70% more Melons by June 22 and 47% more for the entire season than the same number of direct seeded plants. Early Melons sell at premium prices. Preliminary reports of 1960 tests confirm their 1959 results with transplant yields of 132% more Melons by June 22 and 80% greater yield for the entire season than the same number of direct seeded plants.

GILBERT BROOKS FARM, Plainfield, Wis. Brooks is one of the leading commercial vegetable growers in Wis. His establishment is often used for testing new materials and methods of vegetable culture. In 1960 Brooks tested Jiffy-Pots on various vegetable crops with significant results. For example, Jiffy-Potted Cucumbers, variety SMR-18, sown in 3 inch Jiffy-Pots May 1, outyielded direct seeded plants sown May 31 by nearly 50%. This increase in yield far outweighed the increased costs of Jiffy-Potting.

Inspecting Tomatoes in Jiffy-Pot demonstration plot at West Chicago, Ill., August 1960.

Picking first bushel of Jiffy-Potted SMR-18 Cucumbers at West Chicago demonstration test.

Texas A. & M. 1959 Watermelon test, started in 3 inch Jiffy-Pots, showed outstanding yields over direct seeding.

Dramatic evidence of early yielding of Jiffy-Potted Cucumbers at Gilbert Brooks Farm.

*Sold through distributors only—order from them.

jiffy pot

JIFFY-POT® COMPANY OF AMERICA

P.O. BOX 338, WEST CHICAGO, ILL., PHONE 312-231-3900

American Vegetable Grower

Tak Murata (left) and his brother Ken look over young strawberry planting fumigated with chloropicrin at the rate of 75 pounds per acre.

Does It Pay To FUMIGATE YOUR SOIL?

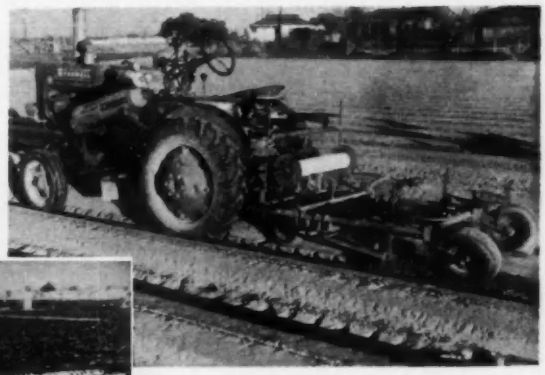
The Muratas of California think it does as they plan for a harvest of over 100,000 trays of strawberries from 40 acres

By HUNTER JOHNSON, JR.
Los Angeles County (Calif.) Farm Advisor

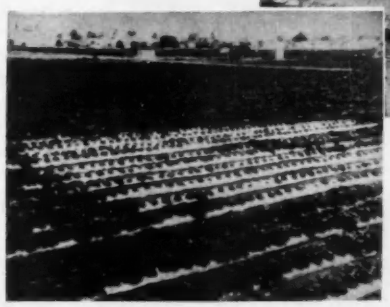
TO Ken and Tak Murata of Downey, Calif., soil fumigation not only pays, "it's a necessity." The Muratas specialize in strawberries and sweet corn on their 60-acre Littlelake Berry Farm adjacent to a metropolitan freeway near Los Angeles. This year they have 40 acres of strawberries from which they expect to harvest more than 100,000 12-pint trays of fresh fruit. Lassen is the principal variety grown by the Muratas, but they also have a small planting of Solana, a new variety.

Soil fumigation plays a big part in their ability to produce high yields. Tak Murata puts it this way: "Soil fumigation is a necessity. The plants grow so much better, and better growth means bigger fruit and more trays per acre. We can't afford to be without it."

Strawberries have been grown on the Littlelake Berry Farm for five years. The first year or two yields were good but in 1959 growth and production became poorer. Diseased plants and general stunting were found throughout the plantings. The Muratas decided to try soil fumigation. Their first trial on 12 acres in 1959 was so impressive that all of their plantings are now on fumigated soil.



With bed injector, tarp attachment, Muratas can fumigate 5 to 6 acres per day.



Field fumigated with chloropicrin-methyl bromide mixture. Note check area.

Soil fumigation is a standard practice for strawberry plantings in southern California. It is estimated that 95% of the strawberries in this area are grown on fumigated soil.

Like most strawberry growers in this area, the Muratas rely heavily on chloropicrin gas for fumigating their soil. At high rates this material is the only effective way to control verticillium wilt, a devastating disease of strawberries. At lower rates chloropicrin kills other less pathogenic fungi which results in growth response and improved fruit size. Since verticillium is not a problem on the Murata farm only lower rates of "tear gas" are used—about 150 pounds per acre.

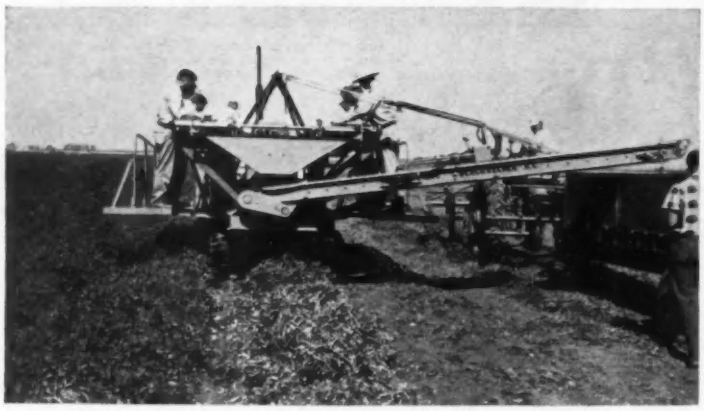
The first fumigant the Muratas used was a combination of chloropicrin and Telone (Dow) at 250 pounds per acre. This gave good nematode and fungus control, and even some weed control. Growth and fruit production was much improved over non-fumigated check strips.

(*Continued on page* 41)

THEY SAID It Couldn't Be Done!

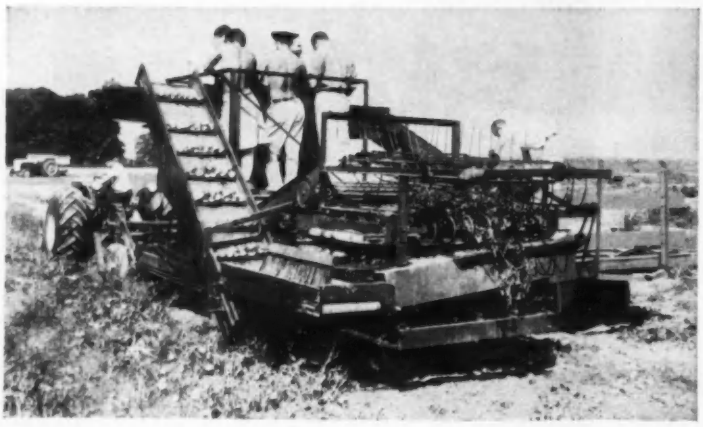
But here's proof positive that machine harvesting of tomatoes is on its way to helping solve the critical labor problem

By S. K. RIES
Michigan State University, East Lansing



• **BLACKWELDER:** Working in cooperation with University of California, Blackwelder Manufacturing Company, Rio Vista, Calif., has developed a self-propelled harvester. This machine cuts the tomatoes off with a blade set at an angle in front of the machine. This allows large clumps of dirt to fall out between the blade and the pick-up, which is similar to a hay pick-up. The pick-up deposits the plants on a device resembling a combine straw walker having crankshafts at both ends, which shakes the plant up and down and at the same time conveys it to the rear where it falls onto the ground. This rear view shows cutting blade, pick-up, and shaking mechanism.

• **BLACKWELDER:** View of grading area of Blackwelder machine. After fruit falls onto a draper conveyor, it is conveyed up onto two grading tables which can accommodate six workers each. As the tomatoes are sorted, they are carried on an elevator into large bulk boxes which are about 24 inches deep. The 1961 Blackwelder harvester has been designed so that it can pick round varieties as well as the paste types that it worked on last year. There will be at least 20 machines manufactured for use in California.



• **MICHIGAN STATE UNIVERSITY:** This is the third model of the MSU machine built since 1958. The plants are cut off with a potato digger blade just below the ground surface. Overhead fingers moving at ground speed aid the plants onto a potato chain. The whole plants are transported onto a shaking bed which reciprocates about 200 times per minute. The fruits fall from the plant onto a series of conveyors which remove the dirt and leaves. These conveyors move the fruits up to a sorting table where four to six graders remove the green and low grade fruit. The tomatoes then move onto another conveyor which lowers them into bulk boxes mounted on a separate trailer. Rear view shows shaking mechanism and grading area.

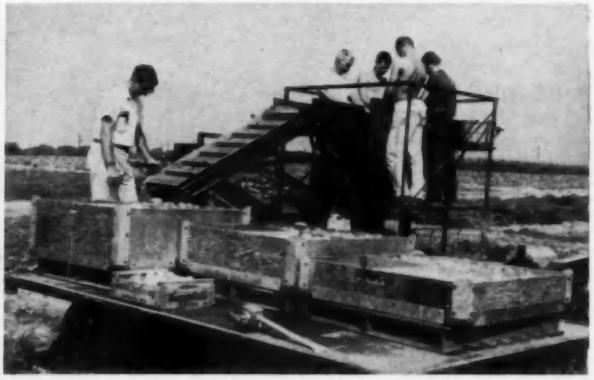
• **CHISHOLM-RYDER:** The Chisholm-Ryder Company of Niagara Falls, N. Y., has a tomato harvester that was modeled directly from the MSU harvester and operates essentially the same. The fruits are loaded into lug boxes which are moved rapidly under the end of the sorting belt on a roller conveyor. This side view of the machine shows the pick-up and sorting platforms. The Chisholm-Ryder machine has been changed this year so that the pick-up of tomatoes is possible without obtaining too much soil. The tomatoes will continue to be handled in lug boxes. Two machines may be sold to processors this year. A new self-propelled machine is now under design.

• **H. D. HUME:** This tractor-mounted harvester was developed by H. D. Hume Company, Mendota, Ill. The Hume machine picks up the plants and cuts them off with a sickle bar similar to that on a mower. The plants are helped onto the elevator chain with a wooden reel. Fruits are removed by six belts with rubber projections that move toward the rear of the machine while reciprocating and thus move the plants off the machine. The fruits fall through the belts onto a conveyor which moves them up to a grading table and then into lug boxes. Method of fruit removal is shown here. This year the Hume machine will be 60 inches wide and will be able to handle bulk boxes and lugs. There will also be facilities for several inspectors on the machine.

• **FOOD MACHINERY:** The harvester developed by Food Machinery Company, Hoopeston, Ill., cuts the plants off and picks them up by means of four rotating discs. The tomatoes are elevated onto a potato chain and removed by bars on a chain which reciprocates as it moves toward the rear of the machine so that the fruit is removed before the plant is deposited on the ground. The fruit falls through the bars onto a series of conveyors, the last of which deposits it into a tank of water. FMC has altered its 1961 model so that only one set of discs are used for picking up the tomatoes and the number of drops on the machine has been cut down to one. They will be able to remove soil faster and capacity will be increased. In addition, the area for grading has been increased and the fruit can be handled in bulk boxes or lugs.

Are these harvesters the final answer? Dr. Ries continues his discussion of tomato harvesters and the need for new varieties on the following page.

A variety type for mechanical harvest—Cornell 54-149. This harvest was on September 6. Left to right, overripe, ripe Grade 1, and green fruit.



Equipment used for MSU bulk handling studies. Conveyor is raised or lowered by the operator. Bulk boxes are 8, 12 and 16 inches in depth.

A POTENTIAL SAVINGS OF $15 MILLION!

IT has been predicted that by 1970 20,000 men operating about 3000 harvesters will replace the more than 100,000 workers now harvesting the U. S. tomato crop.

Tomato harvesters blossomed forth like flowers in a desert during 1960. In the race to develop a successful machine are Blackwelder Manufacturing Co., Chisholm-Ryder Company, Food Machinery Company, H. D. Hume Company, Ziegenmeyer, and Peto-Ayala.

In addition, University of California, Purdue University (Lafayette, Ind.), and Michigan State University have research programs on mechanical tomato harvesting.

None of these machines is perfect now, but it doesn't take much imagination to see that any one or all of them could develop into a practical tomato harvester. In fact, changes take place so rapidly that there may already be alterations from the descriptions given here. Certainly none of them will look the same next year.

One of the great achievements in 1960 was that we no longer heard the familiar remarks: "It will never work," "It's a good catsup maker," or "Where do you catch the juice?"

What are the problems in machine development? First, it should be stressed that fruit injury is not the most important problem. For example, tests with the MSU machine have shown that with soft varieties only about 20% of the ripe fruits have cracks due to the machine. These fresh cracks are usually about one inch long and should be no problem for the processor. In fact, observations in commercial fields show that hand picking causes as many fresh cracks as good machine harvesting. Of course, work will be done on all machines to handle the fruit more gently.

The best width of pick-up will be determined by the varieties to be harvested. The widths now vary from 48 inches on the MSU machine to 24 inches on the FMC model.

All of the fruit removal systems seem to be effective. One of these methods of shaking the plant either laterally or vertically may prove to result in less injury to the fruit.

Experience, to date, indicates that any practical machine will have to provide room for at least four graders on the machine in order to end up with a quality pack.

The major problem for practical mechanical harvesting of processing tomatoes is the development of varieties with concentrated fruit set. Most plant breeding programs have been aimed at incorporating good processing quality and disease resistance into varieties which can be harvested over a long period of time. The ripening requirements of a variety for mechanical harvest are just the opposite. A maximum number of fruit should be ripe at the same time. In addition, varieties will probably need determinate or dwarf vines, disease resistance, and good processing quality, including characteristics for firmness and stemlessness. There will also be a need for early maturing varieties in order to make more efficient use of processing plant facilities.

Unfortunately, there are no varieties which now meet all of these requirements. However, available varieties demonstrate some of the desirable qualities for mechanical harvest. The variety Fireball is early and has fairly concentrated fruit set when grown in northern states. Single harvest yields of 10 tons per acre are not uncommon in these states when the crop is properly grown.

A breeding line from Cornell was as early or earlier than Fireball in MSU tests and yielded over 15 tons per acre of good processing fruit. Libby C-52 has probably been outstanding in our area because of consistently high yields and concentrated fruit set. It usually is one week later than Fireball.

Other varieties that have appeared promising in our tests are Heinz's experimental lines E.S. 24 and 1370, No. 435-4 from Oregon State, and Maryland 314. Some areas have had poor results with varieties which have appeared good in Michigan. University of California this year has released VF145, a variety developed specifically for mechanical harvest.

Should the fruit coming off the machine be handled in lugs, water or bulk boxes? Various methods have been tested at MSU. All of these were compared in several handling studies. One year's tests indicated that a bulk box, 12 inches deep, 43 inches wide, and 45 inches long was more practical than lugs, water hauling, or bulk boxes 8 inches deep or 16 inches deep. The 12-inch deep box holds about 500 pounds of ripe tomatoes.

All of the machines in the field in 1960 will probably be drastically changed this year. Undoubtedly growers will have a choice of at least two commercially manufactured models. The big problem remains for the plant breeders. Good varieties fulfilling all of industry's requirements will probably not be available for several years.

However, the increased difficulty in procuring labor for harvesting the tomato crop plus the potential saving of $15 million in harvest costs will undoubtedly speed up the development of both varieties and machines. THE END.

S·P·M PREMIUM

Quality fertilizer containing a combination of readily available magnesium and sulphate of potash obtained from Sul-Po-Mag®

steps up vegetable weight, size, quality!

SUL-PO-MAG® HELPS MORE HEADS MAKE TOP GRADE!

Sul-Po-Mag contains magnesium and potash, the 100% water-soluble, high-yield team!

Often the reason for nutritional deficiencies in vegetable crops is the heavy use of fertilizers with a poor magnesium-calcium-potash ratio. Vegetable crops cannot make full use of potash when magnesium is lacking. Plant growth is slowed, rooting retarded. Magnesium availability must be balanced to potash fertility for maximum results.

Granular, water-soluble Sul-Po-Mag meets this vegetable fertilization problem head-on! Not only do you get perfectly timed release of magnesium and sulphate of potash in Sul-Po-Mag, but you also get sulphur — so vital in the production of plant protein. With plenty of Sul-Po-Mag, sugar and vitamin C content of vegetables go up. Tenderness and color are markedly improved!

That's why it will pay you to make sure your mixed fertilizers contain the vegetable quality boosters of water-soluble Sul-Po-Mag. For direct application too, you'll find Sul-Po-Mag one of the most productive forms of plant-available magnesium.

POTATOES — Sul-Po-Mag's sulphate form of potash helps grow a potato with a higher specific gravity. Profitable result: chippers can get up to 31 lbs. of chips from 100 lbs. of potatoes.

TOMATOES — This crop shows exceptional quality response to magnesium in Sul-Po-Mag. Color, acid and sugar content increase . . . and definitely higher tomato yields also result.

S·P·M PREMIUM

Quality fertilizer containing a combination of readily available magnesium and sulphate of potash obtained from Sul-Po-Mag®

This seal is your assurance of extra-value fertilizer

AGRICULTURAL CHEMICALS DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

ADMINISTRATIVE CENTER: SKOKIE, ILLINOIS

IMC

PRODUCTS FOR GROWTH®

®TRADEMARK

SPM-17-01

MAY, 1961

$20 or $2000 A DAY!

Make your choice. If you substitute chemical weed killers for the man with the hoe your potential savings can be multiplied 100 times

By NORMAN J. SMITH

Associate County Agricultural Agent, Nassau County, L. I., N. Y.

One grower said you can get your eye on the ground and look crossways through an atrazine corn field for ½ mile and all you can see is corn.

Iochief, popular roadside variety. Left ear from atrazine plot, right from check plot. Neither plot was cultivated during growing season.

How much sweet corn will you pull here? None! Atrazine would have given excellent weed control, also killed weeds after they were up.

Salvatore Russo, Staten Island, N. Y., tried potassium cyanate for onion weed control. Occasionally he got results. Randox makes job easier.

Keep this nozzle as clean as your home if you were going to invite a king. If your nozzles are old or worn, throw them on the junk pile.

Mustard plant dying from 2,4-D. 2,4-D was too risky to assure grower good results. Often corn grew like lightning rods with ears on tassels.

Strawberries after Vapam or VPM. Growers are willing to spend $200 to $400 per acre for this weed, disease, and insect control material.

Too much atrazine in soil injured this cabbage plant. Growers must follow label recommendations to avoid injury to crops following corn.

Nutgrass and potatoes. Grower treated 60 acres last year with eptam, saving his crop. Field would have been worthless without eptam.

Be sure to read "A Free Choice—Herbicides or Humans" on page 46

Colorado Potato Beetle *Leafhoppers* *Fleabeetles* *Potato Tuberworms*
Armyworm *Green Stink Bug* *Leaf-footed plant bug* *Tough-to-kill aphids*

Thiodan®

kills them all: keeps killing them

Besides positive control of all these potato pests, Thiodan provides every other feature you've looked for in a new broad spectrum insecticide. It provides really long-lasting residual control; and Thiodan is safer to use than many pesticides. Thiodan is harmless to vines and causes no off-flavor in potatoes. And what may be a bigger bonus, recent field experience indicates that Thiodan treated plots produced greater yields than other standard treatments under controlled test conditions.

On all counts, performance, residual control and safety, only Thiodan provides so much help producing bigger, better crops. See your dealer today!

Thiodan®

TECHNICAL CHEMICAL DEPT., NIAGARA CHEMICAL DIVISION, FOOD MACHINERY AND CHEMICAL CORPORATION, MIDDLEPORT, N. Y.

Special Report on Safe Insecticides

Dusts Made From Dry Pyrocide Containing Pyrethrum Kill Insects Fast, Leave No Toxic Residue On Market Crops

LEAVES NO TOXIC RESIDUE

Dusts containing pyrethrins made from Dry Pyrocide are exempt from tolerance requirements under the Miller Amendment. They are so safe they can be used right up to market time . . . thus protecting your crops from late insect invasions that can eat deep into your profits.

Dusts containing pyrethrins are safe to handle and apply too.

If you're looking for an insecticide that is powerful enough to give your crops immediate protection . . . yet so safe that it can be used right up to market time . . . you should check dusts made with Dry Pyrocide, containing pyrethrins.

Dry Pyrocide has long been recognized as one of the fastest-killing, widest range insecticides. This year, it's gaining new prominence because of its high safety factor.

FAST KILL FOR WIDE RANGE OF INSECTS

Pyrethrins are effective against almost all insects. Knockdown occurs minutes after application. Insects are paralyzed almost instantly.

So, if you want to combine fast, efficient killing action with complete safety, use economical dusts made from Dry Pyrocide (containing pyrethrins). Your dealer can make specific recommendations for your crops. See him soon, or write to McLaughlin-Gormley-King Co. for more information.

M McLAUGHLIN
G GORMLEY
K KING Company

1715 S.E. Fifth Street • Minneapolis, Minnesota

CARROTS

It's Only Old Age

WHETHER it's called brown heat, brown flecking, or black heart, internal browning of carrots has plagued many growers. While this disorder may affect as little as 5% of the crop, it requires extra manpower on the processing inspection team to sort out discolored pieces, creating an economic problem for both growers and processors.

Recent research conducted at Oregon State College, Corvallis, indicates that internal browning may simply be the result of old age. Surveys conducted among growers indicated that more browning occurred in carrots planted earliest, in carrots from plots with low soil potassium levels, in carrots from plots with low soil boron levels.

In fertilizer trials conducted last season, it was found that yield was increased with application of potassium and high rates of nitrogen-phosphorus. Carrots from these plots were low in internal browning. Carrots planted earliest and left in the ground longest had the highest percentage of browning. The prime thing which seemed common to all the browned carrots was age. Scientists at OSC are continuing their study of the geriatrics of carrots.

CELERY

A Dream Come True

FLOODS in the spring, drought in the summer, black dust storms in the winter—this has been the history of vegetable farming for the 200 Hollanders who settled years ago along Marsh Run, near the village of Celeryville in Huron County, Ohio.

These sturdy Dutch people are facing the future with a smile; a smile brought about by visions of flood-free fields, abundant irrigation water, and adequate irrigation systems that will soon become a reality with the completion of the Marsh Run watershed project.

But these celery and onion growers are not content to stand still waiting for the project to be finished. Frank Buurma, one of the original leaders in the watershed project, is typical of most growers in this organic or muck soil area who are busy installing needed land treatment measures on their farms.

"We were just about ready to give up," Buurma said. "You know I've got nine brothers and two uncles, and we're all working together to make a living from less than 350 acres. That means we just had to do something or move off the land."

One of the major problems on the Buurma farm was drainage. They decided to call on Bill Addison, Jr., of Soil Conservation Service, for help in solving the drainage problem. After making a complete topographic survey, he suggested a combination tile drainage-sub-irrigation system, with a complete land smoothing job to prevent any surface water ponding.

Sub-irrigation was added to the Buurmas' tile system by installing manual gate valves or "stop wells" in the tile lines. These valves can limit the depth of drainage to suit the needs of the growing vegetables. When irrigation water is available, water will be pumped back into the tile system and held in the same manner by the valves.

The Marsh Run watershed project calls for a large upground reservoir to furnish irrigation water for the entire muck area, plus enlarging and deepening of almost 15 miles of channel. This channel improvement work will greatly reduce the flood hazard in the vegetable area and also in the surrounding general farm area. It will provide adequate outlets for drainage and will also serve as a water distribution system to provide water for sprinkler irrigation and sub-irriga-

A familiar scene in Celeryville—workers harvesting celery in a rowboat during a typical summer flood. When completed, Marsh Run watershed project will end flood threats.

KILL THE DRIFT-RESIDUE PROBLEM AS WELL AS THE INSECTS

That cloud of insecticide will eliminate many insect problems, but it could cause another problem – drift residue. But it won't because it's malathion.

Fact: *Crops – including vegetables – cannot reach the consumer carrying insecticide residues (from direct application or drift) which exceed limits set by the Food and Drug Administration.* Violation can result in loss of produce or contracts.

Problem: *Many powerful insecticides, because of their persistence, can't give all-season protection from insects and still conform to residue regulations.* This creates a difficult situation for you. You must keep down residues, but still give your vegetables all-season protection from insects.

Solution: Malathion. *Malathion makes it easy to conform to regulations, while giving you full-season use of its powerful, wide-range insect control.*

Here's why.

Malathion lets you control insects ...without leaving residues

Malathion is low in toxicity to man. And, it kills quickly, but does not leave persistent residues on crops. For these reasons, malathion has a high residue *tolerance* on edible crops. Malathion can be used on most vegetables as close as three days from harvest . . . as close as 24 hours on many . . . and up to five or seven days from harvest on the rest. *Drift-residue danger is minimized, because malathion has high residue tolerances on crops often subject to drift-residue exposure.*

Malathion simplifies insect control

Malathion has been accepted by the USDA for more uses than any other insecticide. It controls nearly every kind of vegetable insect pest, including aphids, thrips, leafhoppers, beetles, weevils, worms, and loopers . . . a total of 20 different insects attacking 43 vegetables! When you use malathion, one insecticide does the job of many.

Malathion lets you solve resistance problems

Of special importance in many areas is malathion's effectiveness in controlling insects that have become – or are becoming – resistant to the chlorinated insecticides. Malathion is a powerful *phosphate* insecticide. It controls resistant cabbage-loopers and many other insects resistant to chlorinated insecticides.

Malathion is easy to handle

The USDA calls malathion "one of the safest insecticides to handle." You don't need a respirator or special protective clothing when you use malathion. Malathion has a record of safety unequalled by any other widely-used insecticide.

Write for free "Malathion Handbook." American Cyanamid Company, Agricultural Division, N. Y. 20, N. Y.

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow their directions for use.

CYANAMID

MALATHION
INSECTICIDES

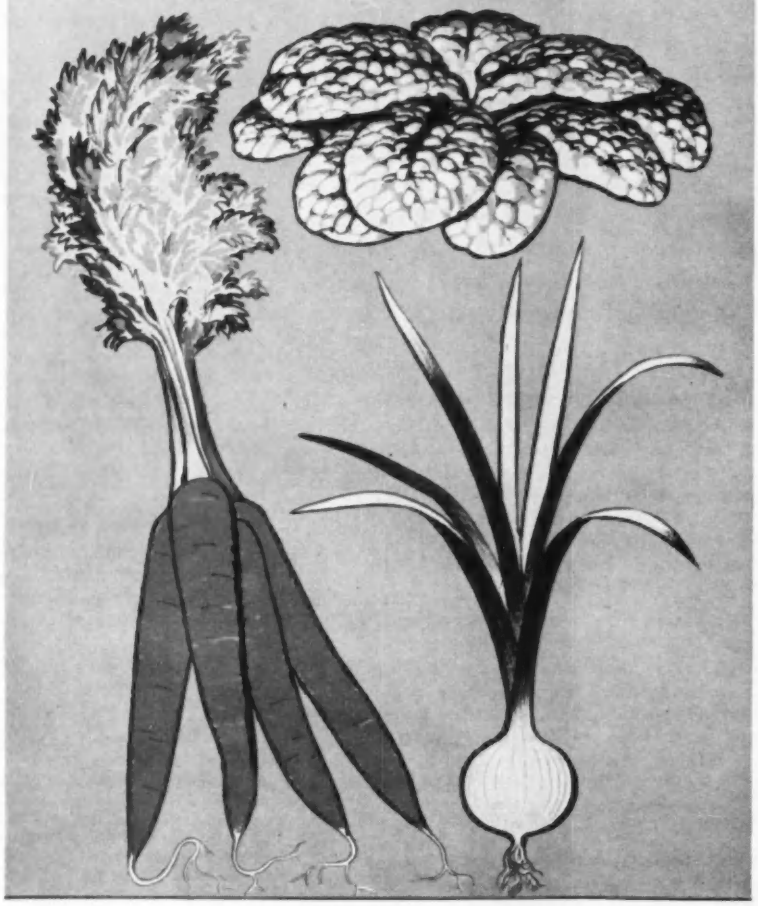
CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

Weeding costs got you down? Use the "Chemical Hoe"... Columbia-Southern CHLORO-IPC

Smart vegetable growers find that a pre-emergence spray of Columbia-Southern Chloro-IPC will give excellent control of many weed pests. Hand-weeding costs have been cut by 50% to 80% in commercial use, on such crops as onions, carrots, and spinach. Yields go up, too, because the young plants have a better chance to become established without competition.

Economical Columbia-Southern Chloro-IPC is available for your use this season in granular and 4-lb. per gallon emulsifiable liquid form. See your dealer for your supply and for helpful information on local application. Or write:

columbia | southern chemicals
CHEMICAL DIVISION
PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER PITTSBURGH 22, PENNSYLVANIA



Pittsburgh Plate Glass Co., Chemical Division
One Gateway Center, Pittsburgh 22, Pennsylvania

Please send information on Columbia-Southern Chloro-IPC on the following crops:

_____

NAME _____

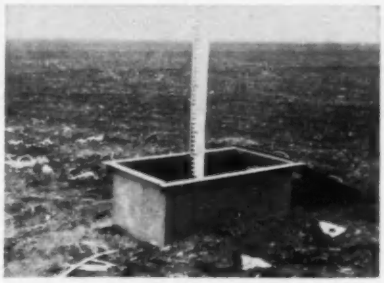
ADDRESS _____

CITY OR TOWN _____ ZONE _____ STATE _____

tion. Several water control structures will be installed to facilitate proper water level control.

Benefits from reduced flooding and providing irrigation water to the celery, radish, carrot, lettuce, onion, and other vegetable crops grown will amount to more than $100,000 annually.

Ben Van Zoest, a longtime resident of Celeryville, summed up the growers' attitude well when he said,



Typical metal gate valve or "stop well" used to regulate drainage on organic or muck soil.

"Things are looking better now, but for a long time we thought we were going to have to take the 'celery' out of our town's name."—*William E. Addison, Jr., Work Unit Conservationist, Soil Conservation Service, Norwalk, Ohio.*

ONIONS

Fertilizer Trials

ONION plots that received 150 pounds of nitrogen fertilizer produced 29.4 tons of onions per acre in a series of fertilizer trials conducted in Nevada's Washoe Valley last season by Dr. Robert H. Ruf, horticulturist at University of Nevada, Reno.

Seed was planted March 10 and the onions were harvested the first week in October. At planting time 50 pounds of nitrogen was applied in bands and 100 pounds as a side-dressing in mid-June. The plots were surface irrigated.

There was no difference in yields between the plots receiving this treatment and those receiving 100 pounds of nitrogen in bands at planting time and 100 pounds as a side-dressing in mid-June. Results indicate that most of the nitrogen applied at planting time leached from the root zone before the plants were able to absorb it.

Both plots received 50 units of phosphorus per acre at planting time. The control plot, which did not receive any fertilizer, produced 5.8 tons of onions per acre.

35 lbs. of portable power

to cut the cost of pest control!

It's all 3...

★ MIST BLOWER
★ DUSTER
★ WET-DUSTER

★ COMFORTABLE
★ ONE HAND CONTROL
★ PLASTIC SPRAY TANK

IN THE FIELD. Spray, dust or wet-dust up to a 40-ft. swath—treat an acre in 10 minutes!

IN THE GREENHOUSE. Walk easily through narrow aisles—or treat from the outside—get complete coverage of mist or dust in minutes!

HUDSON "928" (Schefenacker) MIST-SPRAYER/DUSTER

Whatever your plant insect or disease problems, here's how this powerful 3-in-1 machine can help you get better control at rock-bottom cost.

Is it a job for spraying? The Hudson "928" applies liquid concentrate at ample velocity for thorough penetration and complete under-and-over-leaf coverage.

Is it a job for dust? Here's the machine to treat large areas fast; applies dust at the velocity needed for maximum control of plant diseases and insects.

Want to dust when plants are dry? You just attach compact water tank, add water to air-and-dust stream. Dust sticks even when humidity is extremely low.

Need to get on the job fast? You're in the field controlling pests while others are getting big rigs ready.

Big machines bogged down? No need to wait for fields to dry when you own a Hudson "928"—it goes wherever and whenever a man can go.

How about inside work? The Hudson "928" will go down narrow aisles—in tight quarters—and mist-spray or dust a house in minutes. In low ceiling houses of average length, just poke the nozzle through a doorway and fill the entire house with billowing spray or dust.

How about cost? Compact, superbly engineered, with work-capacity near that of rigs costing many times more. You'll be surprised by how little it costs to put one in your field. Find out now—mail coupon today!

Comfortable
Soft foam cushion, rubber shocks absorb vibration,—keeps it from the operator.

One Hand Controls
Regulate air volume and motor speed.

Plastic Spray Tank
Rust and corrosion proof.

Only 35 Lbs.—It's light and portable.

Efficient 3 HP Engine
Air blast velocity of 390 ft. per second.

Long Range
Carries material up or out 35' to 40'.

Convenient Capacity
Holds 2¾ gals. concentrate. Dust hopper holds 9 lbs. (average density).

Flame Thrower Attachment Available

Send coupon today for price and full information.

OTHER HUDSON AIDS FOR VEGETABLE GROWERS

SIGN OF THE BEST BUY

HUDSON

© 1961

H. D. HUDSON MANUFACTURING COMPANY
CHICAGO 11, ILLINOIS, U.S.A.

H. D. Hudson Manufacturing Company
589 E. Illinois St., Chicago 11, Illinois AVG-51

Gentlemen: Please send me more information on the HUDSON "928" (Schefenacker) Mist-Sprayer/Duster and complete catalogs on Hudson Sprayers and Dusters.

NAME_____

COMPANY_____

STREET_____

CITY, STATE_____

MY EQUIPMENT SUPPLIER IS:_____

A NEW CONTROL FOR BUG-FREE STRAWBERRIES

Controls major pests—outstanding results against cyclamen mites, aphids, spittlebug.

thiodan®

Long lasting—Two or three applications normally provide effective all season control.

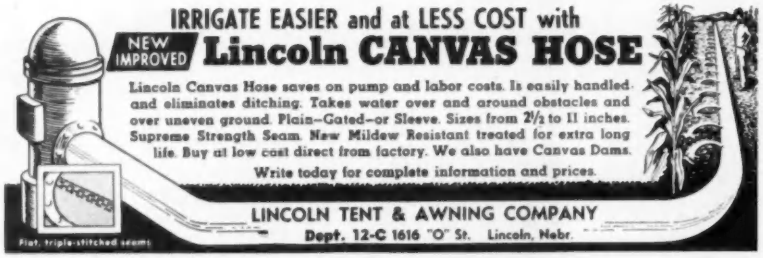
Controls late infestations—apply to strawberries within *eight* days of harvest. Economical—fewer applications, longer residual action, mean savings for you.

TECHNICAL CHEMICALS DEPARTMENT, NIAGARA CHEMICAL DIVISION, MIDDLEPORT, NEW YORK

Thiodan is a registered trademark of Farbwerke Hoechst A. G.

IRRIGATE EASIER and at LESS COST with

NEW IMPROVED **Lincoln CANVAS HOSE**



Lincoln Canvas Hose saves on pump and labor costs. Is easily handled and eliminates ditching. Takes water over and around obstacles and over uneven ground. Plain—Gated—or Sleeve. Sizes from 2½ to 11 inches. Supreme Strength Seam. New Mildew Resistant treated for extra long life. Buy at low cost direct from factory. We also have Canvas Dams.

Write today for complete information and prices.

LINCOLN TENT & AWNING COMPANY

Dept. 12-C 1616 "O" St. Lincoln, Nebr.

Flat, triple-stitched seams

POLYETHYLENE FILM

Transparent

SPECIAL FOR MARKET GROWERS
BLACK MULCHING GRADE

.0015"—3 ft. x 250 ft., $4.80 a roll, net
.0015"—3 ft. x 500 ft., $7.50 a roll, net
.0015"—3 ft. x 1,000 ft., $12.81 a roll, net
.0015"—4 ft. x 1,000 ft., $17.16 a roll, net

"We ship same day"

YOHO & HOOKER
BOX 1165 • YOUNGSTOWN, OHIO

Sizes and Prices

Our Polyethylene film is .004 mil. thick and this is medium weight, and cost considered, is the most satisfactory.

3 ft. x 100 ft.—$3.43 a Roll
4 ft. x 100 ft.—$4.54 a Roll
6 ft. x 100 ft.—$7.48 a Roll
8 ft. x 100 ft.—$9.10 a Roll
10 ft. x 100 ft.—$11.36 a Roll
20 ft. x 100 ft.—$22.86 a Roll

If check with order—we pay the freight.

Big Sample Bargain

Big useable sample piece 10 ft. long by 3 ft. wide. Send $1.00 cash, check or stamps for this big sample by mail, postpaid

Answering Your QUESTIONS

WANTS VARIETY RECOMMENDATIONS

I've noticed variety recommendations for certain states in Answering Your Questions in the past. How about cabbage, celery, and watermelon varieties for my state?—*Wisconsin.*

Cabbage: Jersey Queen, Badger Market, Wisconsin Golden Acre, Wisconsin Copenhagen, Racine Market, Marion Market, Wisconsin All Seasons, Badger Ballhead, Red Hollander. (All these varieties are yellows resistant and listed in order of earliness).

Celery (Golden): Golden Plume, Golden Self-Blanching.

Celery (Green): Summer Pascal, Utah 52-70.

Watermelons: New Hampshire Midget, Sugar Baby, Rhode Island Red, Dixie Queen, Winter Queen.

DIESEL OR GASOLINE?

I'm in the market for a new tractor and have been trying to make up my mind whether to buy a diesel or gasoline type. Would you give me some of your ideas on the subject?—*New Jersey.*

Diesels have been gaining on gasoline tractors, with production and importation both up. Of the 25 makes and models in the 10 to 35 hp range, 19 are imports (eight under the names of American manufacturers). The increase is mainly due to improvements in the starting ease and horsepower ratings of diesel tractors and a gradual shift in public opinion.

But the diesel is not necessarily a better buy than the gasoline tractor. Give careful consideration to several factors. To offset the usual higher original price of diesels, weigh the difference in price between diesel fuel and gasoline, total hours of use a year, total years of ownership, and the difference in the original purchase price. The greater the difference in the first cost, the more hours a diesel will have to be used in a year to make a net saving in operation.

NEEDS PLASTIC MULCH SPREADER

Where can I get a machine that will lay plastic mulch?—*Indiana.*

Engine Parts Mfg., Co., 1390 West 9th St., Cleveland 13, Ohio, makes one.

MARKETING ORDER LITERATURE

There's so much discussion lately on marketing orders and agreements, that I'd like to bone up on just what orders we have here in California. Is there some literature I can get on the subject?—*California.*

"California Marketing Orders" and "What Are Marketing Orders?" are two leaflets you can pick up at your farm advisor's office. These bulletins are excellent for California growers who want to learn more about marketing orders. They explain what the orders are, what they can do, how they operate, what orders are in effect now, and the financing of the orders.

WHERE CAN I BUY SEED?

Moreton Hybrid tomato?—*Illinois.*

Joseph Harris Co., Inc., Moreton Farm, Rochester 11, N.Y.

Velvet lettuce?—*Arizona.*

Corneli Seed Co., 101 Chouteau Ave., St. Louis 2, Mo.

Shipper watermelon?—*Virginia.*

Otis S. Twilley, Salisbury, Md.

Golden Sensation and Tenderfine sweet corn?—*California.*

Seed Research Specialists, Inc., P. O. Box 3091, Modesto, Calif.

Profit-boosting International® B-275 cultivates closer for pennies an acre

No other low-cost Diesel tractor can match the profit-boosting ability of the thoroughly proved International B-275.

On light jobs like planting and cultivating, the dollar-saving B-275 works for as little as six cents an acre for fuel. And its work quality can't be beat. Precise, easy steering lets you cultivate hoe-close . . . quick-dodge to save plants. Always "live" hydraulic power gives you accurate finger tip control of ground working equipment. Extra-wide tread adjustment lets you straddle wide beds and several narrow rows with ease. And there's extra under-tractor clearance to eliminate yield-robbing crop damage.

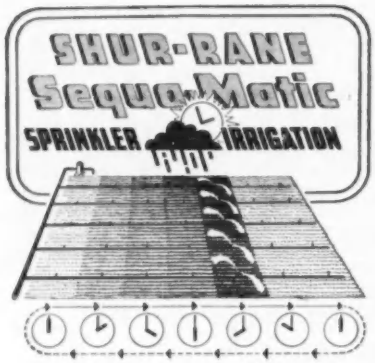
Take the wheel for just an hour! Discover why no other low-cost Diesel comes close to matching the International B-275.

Cultivating Champion, that's the Farmall 140. *Exclusive* Culti-Vision puts you "on top" of your work, directly over the row. This unmatched work view, plus pinpoint steering and rigid cultivator mounting, assures inch-close, damage-free work in all high-value crops.

See your IH dealer! Get complete details on vegetable-tailored Farmall® and International tractors that are available in six power sizes from 10 to 65 hp. Pick your power. Your IH dealer will arrange a demonstration.

INTERNATIONAL HARVESTER

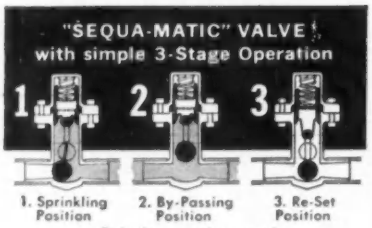
World's largest manufacturer of farm equipment



Automatically
MOVES THE WATER
without moving the pipe!

This system moves the sprinkling operation from one end of the field to the other by progressively actuating multiple sprinklers.

- Reduces Labor Costs
- Increases Profits
- Increases Yields
- Improves Crop Quality



These systems also available.
ASK FOR DETAILS

SHUR-RANE PORTABLE PIPE

SHUR-ROLL WHEEL-MOVABLE PIPE

John BEAN fmc

DIVISION OF
FOOD MACHINERY AND CHEMICAL CORP.
LANSING, MICH. • ORLANDO, FLA. • SAN JOSE, CAL.

Gentlemen: Send me complete information on:
☐ SEQUA-MATIC Irrigation
☐ SHUR-RANE Sprinkler Irrigation System
☐ SHUR-ROLL Sprinkler Irrigation System

Name_____
☐ Farmer ☐ Student ☐ Dealer

Address_____

City_____ State_____

Dept. AVG-2

As It Looks To Me

By JOHN CAREW
Michigan State University, East Lansing

SUPPOSE, for every bushel of tomatoes grown, there was one "bushel" of demand. No shortage and no surplus—a perfect agricultural economy.

Obviously, our U.S. farm economy is imperfect. Vegetable supplies are often out of gear with demand. Not much perhaps, but enough to cause prices to rise and fall sharply. The reason? Mainly because growers lack control over production.

Marketing orders, acreage controls, and even licenses might be helpful. But they will never solve the problem of regulating supplies until the plant itself joins the "organization." The only solution lies in gaining mastery over the *crop;* either gaining control over the forces that determine yield and quality, or gaining knowledge enough to regulate their influences on growth.

Why do tomato yields average 20 tons one year and 10 another?

What causes melon quality to vary widely between seasons?

What is responsible for the poor keeping quality of onions and squash one year and not another?

How do you explain vintage crop years?

Diseases, insects, nutrition, and weather are part of each answer.

Everyone agrees that weather differences between seasons account for these major yield and quality fluctuations; directly or through an influence on pests and diseases. But this is in reality an excuse rather than an explanation, offering scant aid to the grower who seeks primarily to control the future influence of weather rather than to account for past failures.

The real question is: How can these crop responses be predicted and brought under man's control?

Few scientists have as much potential for contributing to American Agriculture as Dr. Jen Y. Wang of University of Wisconsin. Dr. Wang is an agricultural meteorologist specializing in phenology—the activities of plants and animals as related to climate.

His research has attracted worldwide attention. Indicative of his professional status is the fact that a large number of organizations including American Can Company, Continental Can Company, Inc., Libby, McNeill and Libby, Wisconsin Canners Association, U. S. Weather Bureau, and USDA are supporting his work through grants.

Consider the Wang method for predicting sweet corn maturity dates. The older method used by processors to schedule plantings and forecast maturity involved the recording of daily maximum and minimum air temperatures for the entire growing season and calculating daily degree hours. Wang's new method calls for the recording of soil temperatures at a 1-inch depth for only 13 consecutive days beginning the day prior to planting. Furthermore, his "batting average" in predicting maturity for the four varieties studied was higher.

On the press at University of Wisconsin, Dr. Wang's *Bibliography of Agricultural Meteorology* promises to be a monumental contribution to the field. More than 10,000 references covering 30 different languages are included in the 800 pages. Publication is expected in June, 1961.

Dr. Wang and his colleague Dr. V. E. Suomi are publishing a series of summaries of the climate of plants, the "Phyto-Climate of Wisconsin." Data, maps, and charts relating the detailed growing season and temperature and rainfall patterns for all areas of the state have proved invaluable to processors.

The Wisconsin Phenological Society was organized in 1959 to further research in phenology. Its information was based on a number of assumptions, several of them worthy of repetition:

- Periodicity in the development of plant life is associated in a positive manner with environment, particularly temperature, moisture, and light.
- Observations of the development of plants can be correlated with weather and the weather bureau data converted into biologic data and vice versa.
- Observations of "indicators" can be associated with related organisms; for example, plants with insects or crop plants with trees.
- These associations can form the basis for predicting future effects and the timing of events.

Weather records were available from many Wisconsin areas. The

problem was to obtain statistically reliable biological records. Time of blooming of shrubs such as lilac and forsythia would be one approach, but genetic differences between plants in areas might be appreciable.

A package of six crocus corms, from a uniform lot of 4000 imported from Holland, was sent to 660 volunteers throughout the state and planted according to directions. Each member was to report time of blooming and therefore contribute his share of information toward the preparation of a phenological map of the state.

Wang's most exciting project is a pilot agrometeorological station network in Wisconsin, Illinois, Indiana, and Michigan, organized primarily to gain phenological information on seven processing vegetables: peas, sweet corn, cucumbers, tomatoes, beets, carrots, and asparagus. From this network he seeks more information on: predicting yields and quality, forecasting dates of maturity, management control of harvesting and processing, selecting planting sites, and improving cultural practices.

The instrumentation of each station is adapted from the unique weather recording package developed by Dr. Suomi for the weather satellite Tyros. Each station will record soil temperature (three depths), air temperature (three heights), vapor pressure gradient, net solar radiation, rainfall, snowfall, evapotranspiration, and maximum and minimum air temperatures on two Rustrak recorders each capable of storing eight sets of information.

According to Dr. Wang, we may not be able to predict the weather, but we certainly can learn much about predicting and ultimately controlling crop response to weather. THE END.

CALENDAR OF COMING MEETINGS AND EXHIBITS

May 4—Greenhouse Vegetable Day, Ohio Agricultural Experiment Station, Wooster.

June 19-24—Pacific Division American Association for the Advancement of Science, University of California, Davis.

Aug. 22-23—Ohio Pesticide Institute, Ohio Agricultural Experiment Station, Wooster.

Sept. 14-16—Texas Citrus & Vegetable Growers & Shippers convention, Shamrock Hotel, Houston.

Sept. 27-29—Florida Fruit & Vegetable Association convention, Hotel Americana, Ilal Harbour.—J. Abney Cox, General Convention Chairman, Princeton.

Oct. 1-4—Produce Packaging Convention and Exposition, Chase-Park Plaza Hotels, St. Louis, Mo.—Robert L. Carey, Exec.-Sec'y, Produce Packaging Association, P. O. Box 29, Newark, Del.

Oct. 29-Nov. 1—National Agricultural Chemicals Association annual meeting, The Homestead, Hot Springs, Va. — L. S. Hitchner, Executive Sec'y, 1145 19th St., N. W., Washington 6, D. C.

Nov. 6-7—Washington State Weed Conference, Chinook Motel & Tower, Yakima.

SEQUA-MATIC IRRIGATION?

Check these reports from users!

Ed A. Bartosz
Turner, Oregon

POLE BEANS

"Our first experience with the Shur-Rane Sequa-Matic Sprinkler Irrigation System has been excellent. On a nine-acre bean yard this season, we saved all of the cost on labor which would ordinarily have been used to move pipe. We can also point to better moisture control and distribution of water. We liked Sequa-Matic so well we are ordering more for an adjacent yard this spring."

John A. Kochergen
Huron, California

POTATOES

"We have sufficient confidence in the labor-saving and yield-increasing qualities of the Shur-Rane Sequa-Matic Sprinkler Irrigation System to install it on 160 acres of potatoes. We have accurate cost and production data on previous crops. These give us an opportunity to make what we believe will be some very favorable comparisons."

W. O. Pevehouse
Waterford, California

NURSERY CROPS

"With the Sequa-Matic System I reduced my irrigation labor costs from $200.00 to approximately $5.00 per acre. This even includes the cost of laying out and picking up the system."

Lester Neufeld
Newport Beach, California

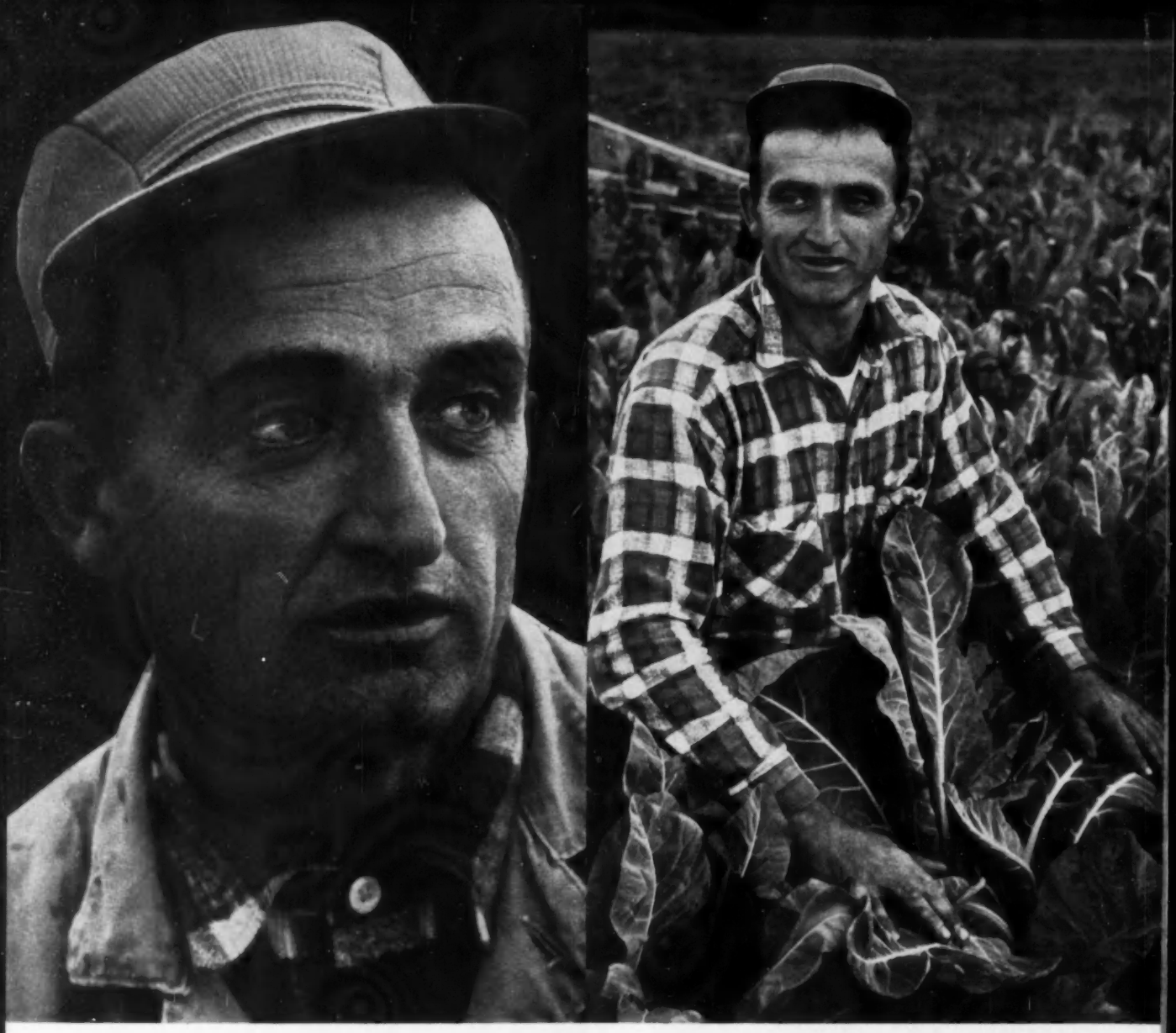
ORANGES

"We had a Sequa-Matic System installed in a 30-acre grove during the summer of 1960. The results have been gratifying enough that we are planning to expand the installation to 70 acres this spring. We are particularly pleased with the savings in time and labor."

SHUR-RANE Sequa-Matic SPRINKLER IRRIGATION

SEND TODAY for illustrated literature, including agricultural magazine report of typical installation. Write nearest John Bean Division. Addresses below. Use coupon on opposite page.

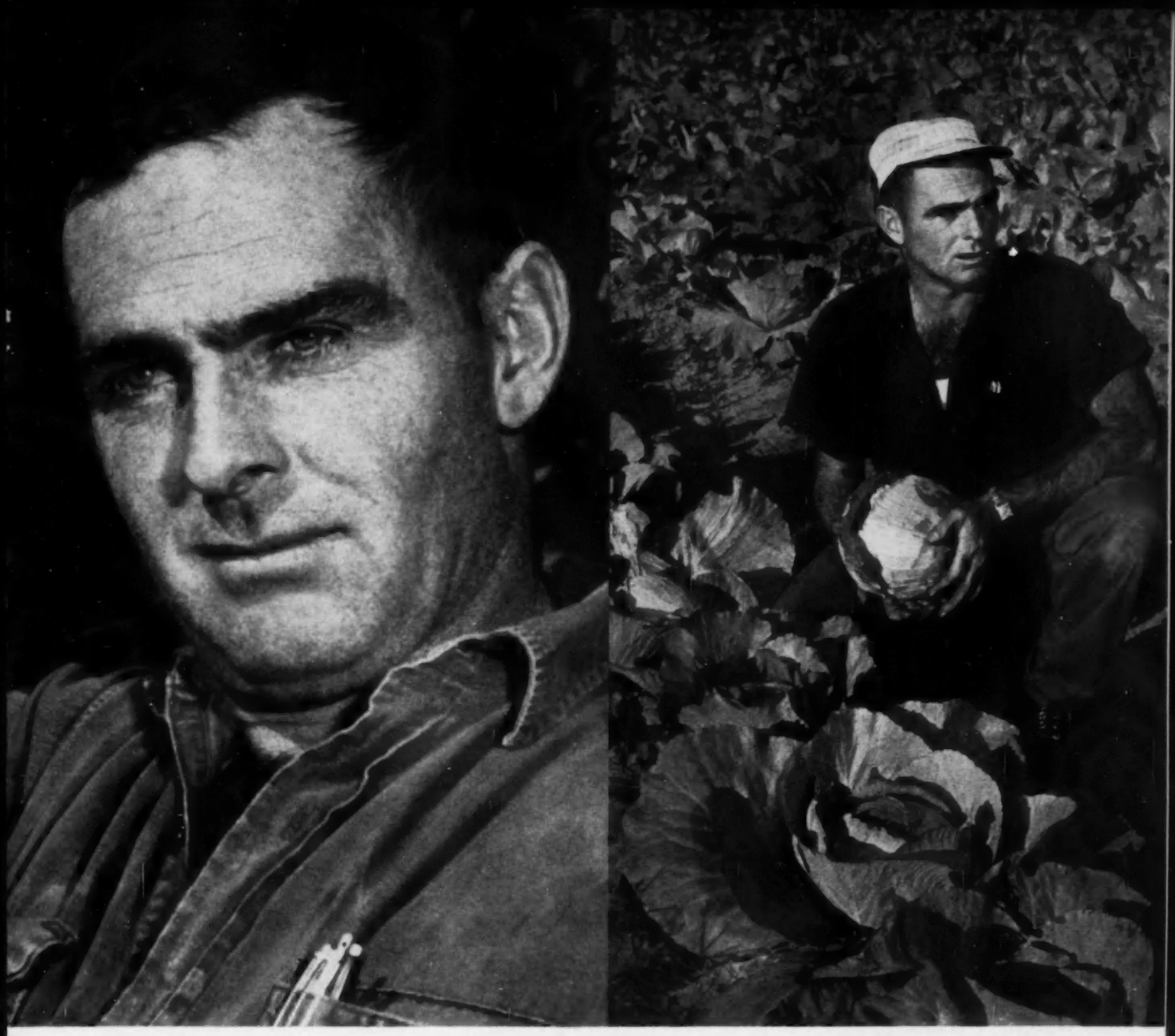
John BEAN®
DIVISION OF
FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING, MICHIGAN • ORLANDO, FLORIDA • SAN JOSE, CALIFORNIA
fmc



SHORT-RESIDUAL DIBROM* FOR

"First insecticide I've found that will give a complete cleanup of cabbage loopers," says Grower George Reeve of Aquebogue, Long Island, New York. "I came in with DIBROM where the loopers were really thick. Next morning, every one of those loopers — some as big as lead pencils — were lying between the rows. I never saw such a kill." **DIBROM gives fast, effective kill — mainly by contact action — of insects in all stages of growth, except eggs. It controls loopers and other caterpillars, leaf miners, aphids, leafhoppers, many more. DIBROM is safer to handle than most phosphates, compatible with most fungicides and insecticides, except highly alkaline materials.**

*DIBROM IS THE TRADEMARK OF CALIFORNIA CHEMICAL COMPANY, ORTHO DIVISION FOR PHOSPHATE INSECTICIDE. ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE. T. M. REG. U. S. PAT. OFF.: ORTHO

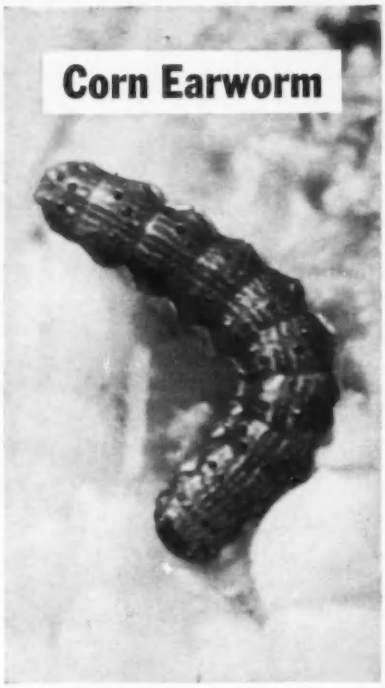


SURE KILL CLOSE TO HARVEST

"Being able to use DIBROM right close to harvest is a big advantage," says Grower Lawrence J. Ohlman of Toledo, Ohio. "Infestations close to harvest happen almost every year, and stopping damage at this time can mean the difference between kraut factory prices and top market prices. That difference can average around $500 an acre." **DIBROM has a residual life of only a few days and can be used within 4 days of harvest time. It is registered for use on cabbage, broccoli, cauliflower, lettuce, beans, Brussels sprouts and many other vegetables. Available in two forms — ORTHO DIBROM 4 Dust or ORTHO DIBROM 8 Emulsive.**

ORTHO®

CALIFORNIA CHEMICAL COMPANY, ORTHO DIVISION, Richmond, Calif., Washington, D.C., Atlanta, Ga. **HELPING THE WORLD GROW BETTER**



SOCK 'EM with SEVIN®
INSECTICIDE

SEVIN gives excellent control of corn earworm, European corn borer and sap beetles—at low, low cost with the new low price. Yields of undamaged ears are as good or better than those obtained with the best of other insecticides.

You can use SEVIN on the day of harvesting fresh market corn to control insects. *Canning corn fodder, husks and cobs may be fed to livestock* without contamination of milk or meat by residue. Just follow label directions and allow seven days between application and harvest.

Use SEVIN also to control important insect pests of beans, tomatoes, cucumbers and several other vegetables. When insects attack—SOCK 'EM with SEVIN!

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation
270 Park Avenue, New York 17, N. Y.

UNION CARBIDE

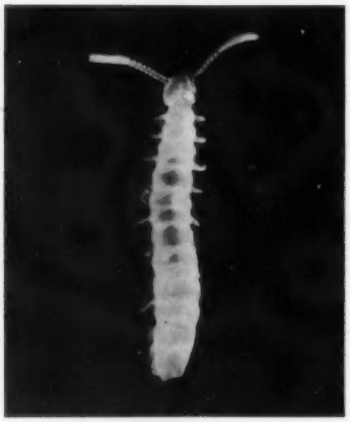
SEVIN is a registered trade mark.

POTATOES

Symphylids Not Wanted

ABOUT 12 years ago potato growers in Lehigh County, Pennsylvania, were faced with a mysterious problem. Several fields began to show signs of trouble; the come-up was poor, the potato vines were stunted, and the harvested tubers had pimples all over them.

A thorough study of the infected fields was launched by the extension entomologist and former county agent, Al Hacker. Nothing was found until the plants emerged through the soil. Then they noted that the little fiber roots that ordinarily should have been formed were not present. As the season advanced, this condition became aggravated. A few fiber roots grew into a tight ball with a spindly plant which produced practically nothing.



A symphylid.

At last, the enemy was found. A garden centipede or symphylid was located in the soil near the potato stalk. This small, white insect is a difficult one to locate and if you are not looking for it you never will see it. As you break open a handful of soil this quarter-inch long white streak will disappear into the dark crevices of the soil—it hates to be exposed to sunlight.

Since 1947 several dozen farms throughout the county have been infested with symphylids. This insect, however, has been confined largely to the Berks Shale type of soil.

We've discovered several interesting things about symphylids, including partial control. We have found that once a field has been infested it does not mean that it always will remain so; that the symphylid buried deep during winter remains buried until the soil becomes warm; and that many of the insecticides have been practically nil in value as control measures.

Potato growers such as Clayton Snyder and Homer Koenig tried everything in the way of soil treatments to stop the infestation. DDT was put down and so were chlordane, aldrin, dieldrin, toxaphene, and lindane. Several growers even thought of trying BHC. Nothing seemed to prove effective as a control even when used near the plant in row application.

It hurts to have a grower with a serious problem and as a county agent be unable to give him recommendations for its control; but this situation occurred year after year until three years ago when our extension entomologist, Dr. Henry Menusan, told us some research had shown that parathion, properly applied, gives fairly satisfactory control.

Now our standard treatment for symphylid is one application of parathion at the rate of 2 gallons of 25% emulsion, or 26 pounds of 15% wettable powder, or 1 gallon of 4-pound-per-gallon emulsion sprayed on the field and immediately plowed under. Growers have reported good results

FREEMAN SPEAKS UP . . .

Issues Warning to Potato Growers

"THE Department of Agriculture came to the assistance of the potato industry early in March of this year because of the burdensome supplies of round white potatoes, particularly. A program to divert potatoes of less desirable grades and sizes to starch was authorized to prevent surplus supplies from further depressing potato prices generally. But being forewarned is being forearmed and we can now plan for another crop.

While the Department has every intention of assisting agricultural producers wherever practicable, we do not expect to undertake stopgap programs where producers have not planned with caution and planted beyond market needs. Before planting, potato growers should stop, look, and listen: Plant in accordance with USDA acreage guides. This is a sound way to protect your markets and your income."

Two potato plants from same field. Stunted plant on left has been infested with symphylid.

but not perfect control. Parathion is short-lived in the soil and does not provide any residual control for the next rotation of potatoes. Thus, this expensive application must be repeated when potatoes are replanted in the same field several years later.

Here in Lehigh County we now expect to hear fewer reports from potato growers of a crop reduced in size and poxed with pimples. Undoubtedly the symphylid will remain in our potato fields and trouble will be found from time to time. But potato growers have found a way out and no longer are planting their fields in potatoes with tongue in cheek because research, demonstrations, and grower co-operation have helped to correct a local potato production problem.—*S. Glenn Ellenberger, Lehigh County (Pa.) Agent.*

Reducing Blackspot

"NO bruises; no blackspots" is the reason behind a new method of handling potatoes being tested by scientists at Washington State University, Pullman. They are using water to prevent bruising at two critical stages of potato handling—from digger to truck in the field, and from truck to conveyor belt and warehouse loading shed.

An experimental watertight truck tank made from a standard steel grainbed was used in the tests. The tank was half filled with water and potatoes were dumped from the combine conveyor into the water.

The water helped buffer the impact of potato against potato; also the impact of potatoes against the rocks often scooped up by the potato harvester. The water, aided by an occasional jerk of the truck by the driver, helped spread the potatoes evenly to all corners of the tank bed.

When the potatoes reached the waterline, the water was drained out, its job done. The potatoes were in place, closely and evenly packed. As the water drained out through a watertight door at the rear of the truck, about 4 more tons were added to top off the load.

At the packing shed, the cab end of the truck was elevated, the rear door opened, and a high-pressure stream of water aimed against the forward wall of the tank. The reverse current carried the potatoes out of the tank.

According to Dr. F. E. Larsen, WSU horticulturist, results of the tests to date show that bulk water handling in the field is feasible. He also indicated that equipment for such handling may cost even less than the standard loading boxes now in use.

Equipment used in the study cost $500 to build to specification. If standardized and produced in quantity, the cost could be even less, Larsen said. Standard loading boxes cost $750.

Fertilizing Muck Soils

MUCK soils for potato production often need to be fertilized differently than upland soils. The main difference is in the amount and time of nitrogen applied. Some nitrogen is needed in the row as a starter for muck potatoes in the early spring. Later, as the soil warms up, they will get enough nitrogen from the normal release from organic matter.

Dr. John A. Schoenemann, department of horticulture, University of Wisconsin, Madison, recommends the following fertilization practices:

In general, broadcasting 400 to 500 pounds of 0-0-50 or 0-0-60 before planting and applying 400 to 500 pounds of 10-35-5 or 6-24-12 in a row is a good program. Avoid side-dressing extra nitrogen unless the soil is extremely wet and cold in June.

PLANTING AND FERTILIZING PROGRAM OF PENNSYLVANIA'S TOP FIVE POTATO GROWERS

Name, Location, Variety	Acreage Soil Type	Spacing	Rotation	Fertilizing Program Pounds per Acre	Spray Program	Yield per Acre (Bushels)
ERVIN R. HERSEY Stewartstown Kennebec	43	9-10" in row 34" rows 30 bu. seed/A	wheat-grass-potato	600 10-10-10 plowed down. 1600 5-10-10 put in rows.	11 times with maneb.	873
CHARLES BENDER Chambersburg Katahdin	12 Hagerstown loam	10" in row 35" rows 25 bu. seed/A	wheat-potato, wheat-potato	400 6-18-18 plowed down 1200 10-15-15 with planter	7 times with dieldrin, parathion, DDT, and manzate	818
JAMES L. HERTZLER Elverson Kennebec	35 Limestone	9" in row 34" rows 23 3 bu. seed /A	hay-hay-corn-potato-wheat	1600 5-10-10 1000 12-15-15	14 times with dithane M-22 and bluestone	791
W. A. GREGORY SONS Weatherly Kennebec	120 Red Shale	9½" in row 34" rows 29 bu. seed/A	potatoes-oats-clover-timothy	1500 5-10-10 put in rows	11 times with manzate	756
J. A. and ROBERT H. JONES Bath Katahdin	83 Berk's shale	9½" in row 34" rows 32 bu. seed/A	potato-wheat-alfalfa-timothy	650 10-20-20 put in rows	10 times with dithane M-22 and Thiodan 5 times	728

SOCK 'EM with SEVIN®
INSECTICIDE

Better control of Mexican bean beetle is easy with fewer applications of SEVIN. This powerful insecticide controls all feeding stages of bean beetle—and the eggs. SEVIN also controls leafhoppers, lima bean pod borer, armyworm, corn earworm, western bean cutworm, velvet bean caterpillar and several other insects.

Use SEVIN on the day of harvest if insects are attacking then. Residue is within tolerance when you follow label directions.

Use SEVIN also on sweet corn, tomatoes, cucumbers, potatoes, eggplant, summer squash and peppers. Apply SEVIN as dust or spray—at the new low price, it's your best insecticide buy!

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation
270 Park Avenue, New York 17, N. Y.

UNION CARBIDE

SEVIN is a registered trade mark.

We think that you will never see Sprinklers better engineered than these!

Sprinklers which gently water trees Assure lush fruit ...with farming ease!

RAIN BIRD sprinklers are engineered for *fruitful* irrigation with a minimum of care and maintenance. Both over-tree models and under-tree sprinklers are designed for scientific water penetration of soil without waste or soaking.

There's a Rain Bird sprinkler engineered to meet your particular requirements. See your dealer or write for free literature.

WESTERN RAIN BIRD SALES
627 No. San Gabriel Ave.
Azusa, California

PLANT GROWER'S CORNER

Why Soil Blocks?

SINCE the article "A Potted Plant Without a Pot" (Feb., 1961 AVG) many questions have been coming in regarding the use of soil blocks or "kubes" as Art Van Wingerden calls them. As near as can be ascertained, very little, if any, work on soil blocks has been done in the U. S., but English, European, and Canadian growers have used this method for years. This month I will discuss some of the thinking on soil blocks. Much of it will be adapted from papers published in foreign countries.

A "soil block" can be defined as soil or organic matter or a mixture of both which has been compressed mechanically to such a degree that, given reasonably careful handling, it will retain its shape, which may be square, hexagonal, or cylindrical, for a considerable period. The normal purpose of such a block is to provide a temporary growing medium for young plants which need not be contained in any pot, box, or other receptacle, although certain plants may remain in blocks for a considerable period. (From *Soil Block Gardening* by Chase & Pouncy.)

Some blocks are formed with a cavity, others are formed around the roots of the cutting or young plant. In the case of the "cavity block," seeds or seedlings can be planted. Either type of block, if properly made, will readily stand normal handling and watering until planting-out time. Vegetable growers were essentially using a crude form of blocks when they used inverted sod for starting early plants.

Mixes Used

Soil blocks are not made entirely from soil as dug from the open ground. Such soil, whatever its texture, when taken in small quantities by itself is as unsuitable for block-making as it is for filling pots.

In order to prevent shrinkage and expansion, together with rapid changes from extreme dryness to extreme wetness, all mineral soils used in containers should be mixed with some organic material which is moisture-retaining, such as leaf mold or peat; with sand to promote drainage; and with nutrients to supply a reserve

SRS

THE MARK OF BETTER CABBAGE CROPS

For almost a half century the Wisconsin Cabbage Seed Co., a Breeder Division of Seed Research Specialists, Inc., has devoted all its efforts to exclusive production of yellows resistant strains of cabbage.

The knowledge and broad experience gained during these years of specialized growing together with the extensive SRS research program has resulted in the development of strains which provide the extra "built-in" quality that produces exceptional yields.

Contact your SRS distributor or his dealers today for your cabbage and other vegetable seed requirements. You plant the best—when it's SRS.

SEED RESEARCH SPECIALISTS, INC.
P.O. Box 3091 • Modesto, California, U.S.A.
Research Centers: Hollister, California • Ames, Iowa

SRS

Better seeds Through Specialization...

of fertilizer. This makes a good potting soil. Generally speaking, most foreign workers agree that any good potting soil can be used.

The potting soil used for block making contains considerably more moisture than one generally would use for potting or spotting out operations. The soil is compressed mechanically and a 3-inch block contains 50 to 100% more soil than would be contained in a 3-inch pot. Consequently, a greater supply of plant food is available in a block than in a pot of the same volume.

The texture of the soil used in block making is apparently very vital. It must not only have the right proportions of plant food but the texture determines the cohesion after it leaves the block machine. The cohesion and texture regulate the quantity of water the block will absorb and retain and also the aeration of the roots. Their is no water retaining ring as found in a pot. The block absorbs water through the top, sides, and bottom.

In England, a John Innes potting compost is used for block making. This mixture consists of 7 parts sterilized medium loam, 3 parts fibrous peat moss, and 2 parts sand by volume. The loam should not be too clayey, nor too sandy but should contain some clay. They vary their peat and sand additions if the loam is sandy or clayey. Peat should constitute not less than 25% by bulk of any good soil block mixture and may go up to a third or even a half of the mix. A large peat content ensures acceptance and retention of water, improves the structure of the compost, and prevents the block from being overcompressed.

English workers say that the blocks are easier to water than pots; that overwatering is very difficult. They suggest automatic sprinkling or subirrigation. Leaching of nutrients is at a minimum because no large amount of water can be run through them as is true with normal pot watering. They do mention that they may need watering more frequently.

A Superior Method?

The author is by no means an authority on block making and would appreciate comments from readers who have had experience in making blocks. The whole idea sounds very practical and research papers from Holland show the blocks to be superior to other commonly used methods in this country.

Soil blocks will be made and tested by the Vegetable Crops Department at Cornell University this year and reports will be available before the next plant growing season.—*Ray Sheldrake.*

Plastic Users Choice!

Gro-Mor

THE PLASTIC HOUSE WITH THE LIFETIME ALUMINUM FRAME

IDEAL GROWER SIZES: 11, 22, 27 and 32 Ft. Widths. Lengths available in Multiples of 8 Ft. . . . from 32 Ft.

SIMPLE CLAMP-ON CLAMP-OFF METHOD OF COVER APPLICATION

Please write for Catalog and Price Sheet AVG

LORD & BURNHAM (Div. of Burnham Corp.)
Dept. P Irvington, N. Y. • Des Plaines, Ill.
St. Catharines, Ont., Canada

Lord & Burnham IRVINGTON, N.Y.

GRO-MOR-another fine product of Lord & Burnham

Puzzled about what fertilizer to buy . . . and how much?

TEST YOUR SOIL THE *Simplex* WAY

AND BE SURE THAT YOU HAVE THE CORRECT FERTILIZER AND THE PROPER AMOUNT NEEDED

Simplex SOIL AND TISSUE TESTING

SIMPLEX SOIL TEST OUTFITS ARE AVAILABLE IN 3 SIZES

The Complete (illustrated) . . .	$54.50
The Junior	36.50
The Farm	28.50

F.O.B. NORWALK, OHIO

EASY AND ACCURATE

Designed to be used by the grower. No knowledge of chemistry is required to make and interpret the tests. Instructions are simple and test results in parts per million are easily converted to pounds per 1,000 sq. feet or acre by use of tables.

MONEY BACK GUARANTEE

Write for full information and literature

THE EDWARDS LABORATORY

P. O. BOX 318-E • NORWALK, OHIO

SAVE TIME SAVE LABOR
Do a BETTER and FASTER job of SPRAYING and DUSTING
with our KWH shoulder mounted MIST-BLOWER and DUSTER, powered by gasoline engine (1 and 3 HP Models).
For literature and prices write to:
VANDERMOLEN EXPORT CO.
378 Mountain Ave. No. Caldwell, N.J.

for the best in
RUBBER BANDS
for YOUR vegetables
ARCO *Open Ring* **RUBBER BANDS**
ALLIANCE RUBBER COMPANY
ALLIANCE OHIO FRANKLIN KY. HOT SPRINGS ARK.

ZON SCARECROW

Stop bird damage to all crops for less than the cost of one shotgun shell per day. Price **$59.50.** At farm implement, seed dealers. If not available in your area, **free delivery** from our warehouses in Buffalo, Baltimore, Chicago, Houston, Tampa, San Francisco. Also all Canadian provinces.
B. M. LAWRENCE & CO.
244 California Street
San Francisco 11, Calif.

LETTUCE

Less Soil-Borne Mosaic

A NEW standard for low mosaic content in lettuce seed has been established by Asgrow Seed Company. Improved production and testing methods have made it possible for Asgrow to offer M-I lettuce seed with mosaic index of less than 0.05% —fewer than five infected seeds in 10,000. This rate is twice as low as existing maximums. Under this new standard growers can expect to find fewer than 250 infected seedlings per acre in crops grown from M-I seed.

TOMATOES

Direct-Seeding Fireball

ABOUT May 15 , Stanley Kast, of Albion, N. Y., will mount his Planet Jr. seeder on a tractor and start to direct seed his tomato fields. This is a new venture in western New York. Although direct seeding has been a common practice in California for many years, it was first attempted in Orleans County in 1958.

Stanley's decision to direct seed some of his tomato fields this year is based on his experiences last year with 3 acres of direct-seeded Fireball. The only reason he didn't start direct seeding in 1959 was lack of a proven tomato herbicide. But a neighbor, Francis Kirby, direct seeded 3 acres.

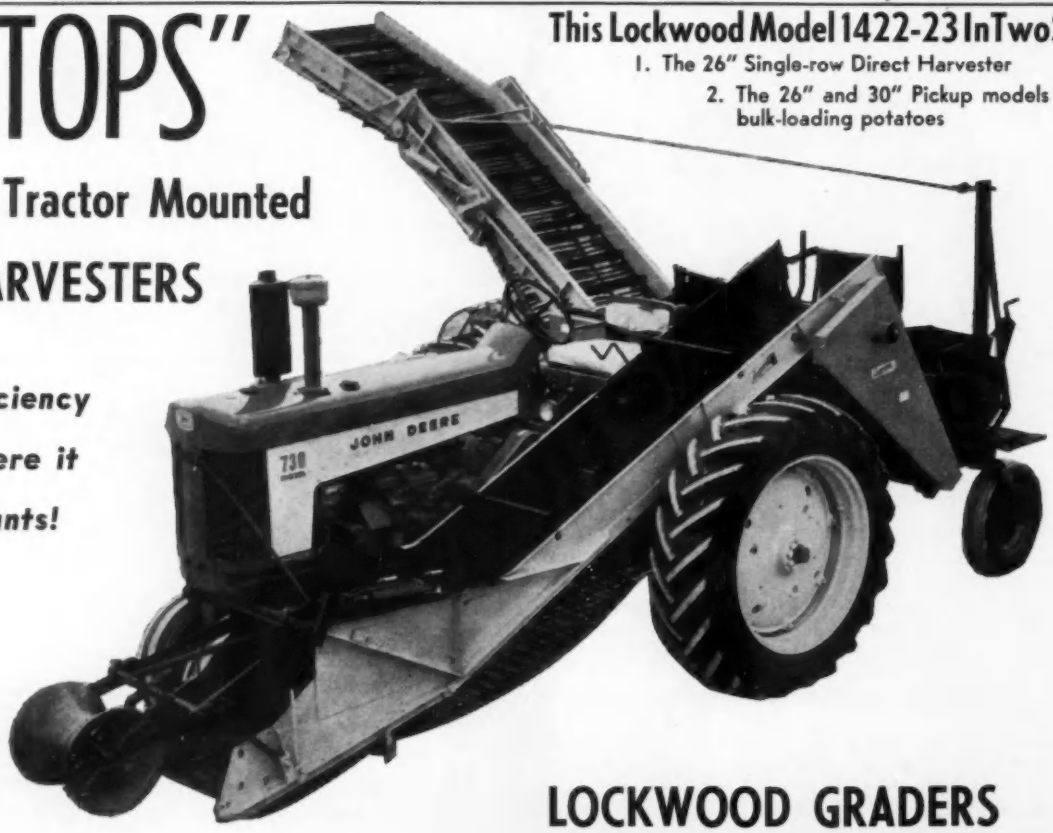
At planting time Kirby applied an 8- to 10-inch band of Vegadex (Monsanto) on 2 acres over the row and after some weed emergence, but prior to tomato plant emergence, he applied solan (Niagara) in the same narrow band over the row.

Due to dry conditions Kirby irrigated the field and the weeds took off rapidly. The soil was too wet to cultivate and the field became very weedy except in the narrow band area sprayed with herbicides. Kirby decided that the entire area should be sprayed with herbicides — not just bands over the row.

When Stanley saw the results on the Kirby farm, he was convinced that a good herbicide program was possible. He selected 3 acres of good silt loam for a test of direct seeding and had a complete soil test made.

Following extension service recommendations based on the soil test, he plowed down 500 pounds of 5-10-15 fertilizer per acre and drilled in 600 pounds of 8-16-16 after plowing. Eight tons of superphosphated manure were plowed down also. The

"TOPS"
In Tractor Mounted HARVESTERS
Efficiency where it counts!
This Lockwood Model 1422-23 In Two Styles
1. The 26" Single-row Direct Harvester
2. The 26" and 30" Pickup models for bulk-loading potatoes



LOCKWOOD GRADERS
GERING, NEBRASKA (Home Office)

field was plowed early and had to be fitted several times due to heavy spring rains.

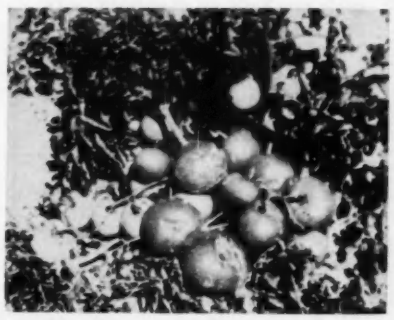
On May 17 the field was seeded, using ⅔ pound of Fireball tomato seed per acre. Because of a very firm seedbed, the seed was planted shallow —about ½ inch deep—12 to 15 per foot in 42-inch rows. This year Stanley plans to use not over ½ pound of seed per acre. The very heavy plant stand last year required extra labor in the thinning operation. Seed will be dropped at the rate of 8 to 10 per foot and plants thinned to one to three plants per foot of row.

On the day of seeding rain was imminent and Vegadex was applied in a spray covering 2 acres. No rain came for two days, so the weed control failed.

The tomato plants started to break through on May 26 and the third acre was sprayed the same day with solan. It killed the 2 or 3% emerged tomato plants, but the others came through normally on May 27, 28, and 29. The acres previously sprayed with Vegadex were also sprayed with solan.

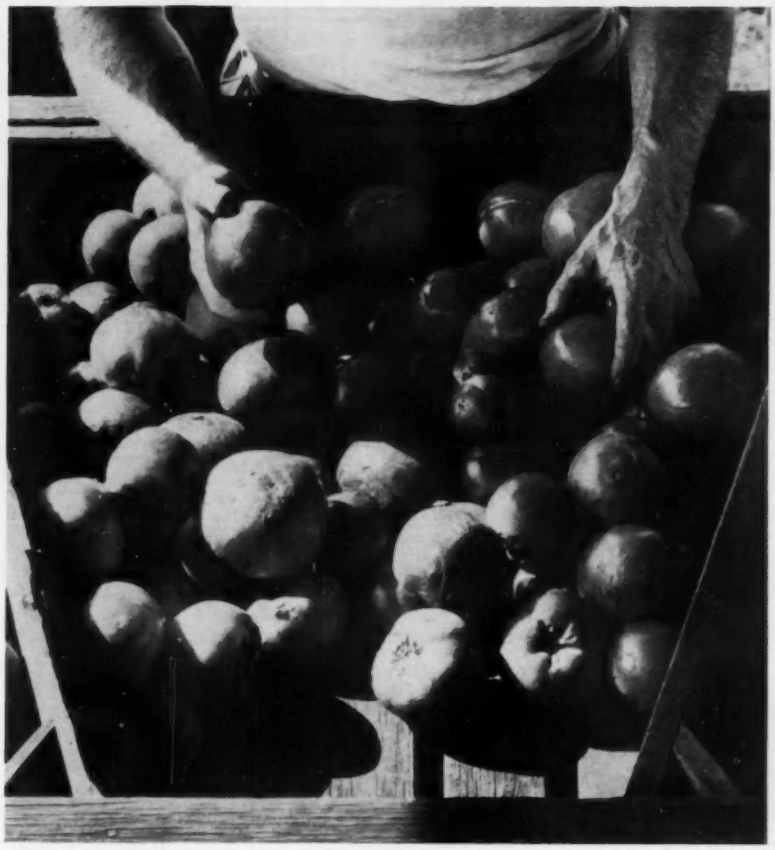
Direct-seeded tomatoes grow slowly for the first 10 days, then take off and make a rapid growth, reaching 4 to 6 inches in height in four weeks, depending on temperatures.

When the plants were 3 inches high, the field was cultivated to loosen the rain-packed soil. Kast thinned the plants when they were 4 to 8 inches high, then immediately sidedressed with 125 pounds of ammonium nitrate per acre. A second appli-



Kast got 14½ tons per acre on first picking of field-seeded Fireball; total yield of 20½ tons.

Field of direct-seeded Fireball tomatoes eight weeks old. Solan gave excellent weed control.



Grow more No. 1's

Tomatoes can be a profitable crop if yields are good and quality high. One way to grow such a crop is to follow a sound spray schedule based on DITHANE® M-22. This time-proved 80% maneb fungicide controls anthracnose, early and late blight as well as gray leaf spot and septoria. It also improves the vigor and color of the vines. For further tomato protection use RHOTHANE® insecticide to avoid costly losses from hornworm, fruitworm. Your dealer will be glad to discuss your spray program with you.

ROHM & HAAS

PHILADELPHIA 5, PA.

SPRAY AND SAVE WITH

DITHANE M-22

HOW TO GET BEST SPRAYING RESULTS

Free booklet, by a leading authority, tells how to use your air carrier sprayer to the best advantage.

Send for yours today, no obligation. Indicate whether farmer or student.

BESLER CORP.
4053 Harlan Street
Emeryville, Oakland 8, Calif.
Whse. stocks in Lansing, Mich.

KING FISH
Made the Difference

True Fish Story

These carrots planted in the same field at the same time. Same seed, with same amount of commercial fertilizer.

Those on left from test rows where King Fish was irrigated at 14 gals./acre. 10 days earlier maturity and 30% increased yield.

Same results
most all crops

* Liquid organic for use with commercials.

FERVE, S. de R. L. de C. V.
Culiacan, Sin., Mexico

K. C. MATTSON CO.
2460 N. Chico Ave., El Monte, Calif.

it's WISCONSIN-powered
to cut your spraying costs

56-hp WISCONSIN ENGINE unleashes a powerful piercing blast of insecticide into dense row crops. Vanes can be adjusted to wind conditions and crop height and density. Sprayer is made by Besler Corp., Emeryville, California.

Powered by a 56-hp Wisconsin Engine, the sprayer shown enables you to cover larger acreage with fewer passes. The powerful engine assures thorough penetration of dense foliage, for positive pest control and a profitable harvest.

You can rely on the VR4D engine for day-in, day-out service. It is precision-built with quality parts and workmanship for heavy duty with minimum wear. And its high torque keeps your sprayer working at peak capacity regardless of operating conditions.

Air cooling assures trouble-free power in extreme heat. It eliminates the radiator, water pump, fan belt, and other water-cooling parts that could cause trouble and work stoppage through fouling or neglect. Thus the VR4D needs less care and upkeep.

Protect your cash crops with sprayers powered by Wisconsin Engines, 3 to 56 hp. Get Bulletin S-254. Write to Dept. F-41.

WISCONSIN MOTOR CORPORATION
MILWAUKEE 46, WISCONSIN
World's Largest Builders of Heavy-Duty Air-Cooled Engines

P-800

cation at the same rate was made at the time of early heavy bloom.

Kast also transplanted over 10 acres of Fireball, using five-and-one-half to six-week-old locally grown greenhouse plants. They were transplanted on the same field and with the same fertilizer on May 25. He used 6000 transplants per acre at a cost of $84 per acre. Machine rental and labor cost about $6 per acre.

The direct-seeded area expenses were seed, $10; solan, about $30; and hand thinning, $35; or a total cost of $75 per acre for about 12,000 to 14,000 plants per acre. The pulled plants had to be destroyed because it was too late in the season to use them for transplants. Orleans County has a short growing season, running from about May 22 to about September 25.

A recommended spray program was followed, including a DDD spray shortly after emergence for control of flea beetle and Colorado potato beetle and a regular maneb schedule for

YOU be the EXPERT!

THE 6-acre field of early tomatoes was under hotents. As the weather turned warm and frost danger lessened, Sam Freeman had trouble deciding when to remove the tents. The plants were crowded under the paper, but he feared a late frost might yet occur.

So Sam compromised and removed the hotents from one-half of the fields; the remaining half of the field was uncovered 10 days later.

To his great surprise, the tomatoes uncovered earlier, ripened first. Fertilizer and spray treatments were identical and there was no evidence of frost damage to either half of the field. Sam had expected a higher early yield from the plants that were protected for the longer time. What is your diagnosis?

Answer on page 42

BUG-FREE, BLIGHT-FREE

Thiodan® is a broad-range insecticide that gives effective, long-lasting control of a variety of destructive pests—aphids, whitefly, Colorado potato beetle, flea beetle, green stink bug on tomatoes. It's economical because you need only one material for many pests—on other crops as well as tomatoes—beans, broccoli, cabbage, cauliflower, cucumbers, melons, squash, potatoes. It saves you time and money by simplifying your insect control program. And its long residual activity saves on repeat applications.

C.O.C.S. is Niagara's exclusive copper fungicide formulation for excellent control of both early and late blight and septoria leaf spot on tomatoes. It is equally effective against blights, wilt, scab and other diseases on potatoes, cucumbers, melons, celery, cabbage, broccoli, cauliflower, carrots, sugar beets. Its fine particle size assures good coverage and it adheres well to leaf surfaces and resists weathering. C.O.C.S., like Thiodan, is extremely mild, and protects plants with no harmful effect on foliage, or yields.

Niagara

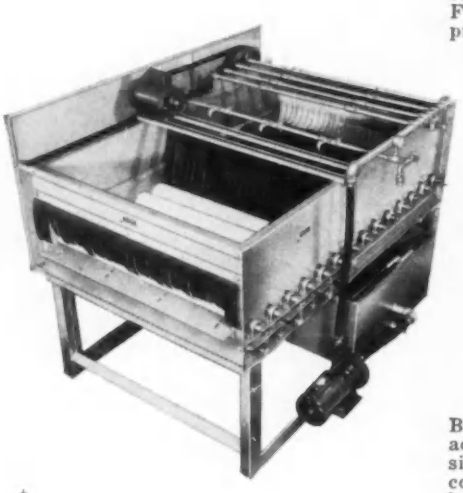
Thiodan is a registered trade-mark of Farbwerke-Hoechst A.G.

FOR COMPLETE DETAILS, ASK YOUR NIAGARA FIELD MAN OR DEALER ABOUT THIODAN AND C.O.C.S.

thiodan c.o.c.s.

NIAGARA CHEMICAL DIVISION • FOOD MACHINERY AND CHEMICAL CORPORATION • MIDDLEPORT, NEW YORK

NEW FMC HYDROBRUSHER PUTS PROFIT INTO PREPARATION OF HIGH-FINISH FRUITS



Load up for a *clean* profit with FMC's new Hydrobrusher for apples, peaches, tomatoes—any tender-skinned produce! The FMC Hydrobrusher gives you 4 profit-boosting benefits:

1. Harvest WET, and pack clean, dry fruit any time—even in the "dewy morn" and rainy seasons! Eliminates problems from condensation on C.A. storage apples.
2. Wet-brushed fruit means better acceptance—profit!
3. "Wet" brushing cleans *cleaner* than old-fashioned dry method!
4. Installation accomplished without disrupting your packing house layout!
5. Cleaner, more comfortable packing house conditions through eliminating peach fuzz, dust, spray residue!

Begin now to enjoy the biggest advance in the packing industry since FMC brought you Stericooling! Specify FMC Hydrobrusher for peach packing in any weather—and for clean-packing apples, tomatoes, and other tender-skinned produce. Write for descriptive brochure about the FMC Hydrobrusher and FMC's *personalized* engineering services that help it do a better job in your plant!

WA 160

FOOD MACHINERY AND CHEMICAL CORPORATION
FLORIDA DIVISION—FAIRWAY AVE., LAKELAND, FLORIDA

Please send me literature on FMC Hydrobrusher

Produce to be handled_____

NAME_____

ADDRESS (RFD)_____

CITY_____ STATE_____

early blight, anthracnose, and late blight.

Harvest of the transplanted area started in late August and was completed about September 20. Yield was 22 tons per acre. The direct-seeded area yielded 20.5 tons per acre, with 14½ tons in mid-September and second picking the last of the month at 6 tons per acre.

If you are thinking of direct-seeding tomatoes, particularly the variety Fireball, here are the steps to follow as outlined by County Agent West:

- **Select a well-drained soil high in organic matter.**
- **Plow early, followed by light fitting to get a smooth seedbed.**
- **Plant seed ½ to 1 inch deep depending on soil type, soil moisture, and impending rain. Limit seed to about ½ pound per acre.**
- **Fertilize well, side-dressing with two applications of nitrogen to provide 60 to 90 pounds of actual additional nitrogen.**
- **Use a good herbicide such as solan for effective weed control. Follow the recommended spray programs.**

Stanley Kast thinks his 1960 experiment was successful and he plans to increase his direct-seeded acreage this year. In fact, at least 20 to 30 growers in Orleans County are planning to follow Stanley's example and make some experimental plantings on their own farms.—*Arthur G. West, Orleans County (New York) Agent.*

NAMES IN THE NEWS

DR. Victor A. Boswell has been named Vegetable Man of the Year by Vegetable Growers Association of America. The head of USDA's Vegetables & Ornamentals Branch, Plant Industry Station, was honored by VGAA for his outstanding contributions to the vegetable industry. **J. D. Campbell** has joined the Canadian Department of Agriculture as a research officer. Campbell, formerly with Monsanto Chemical Company, will head nutrition, weed control, and variety work in vegetables crops at West Coast Experimental Farm, Agassiz, B.C.

Boswell

David F. Behrent, general manager of Agricultural Sales Division, has been named a vice-president of Asgrow Seed Company. **"Hi" Watters** has joined the growers' sales force of Michael-Leonard Seed Company, Davenport, Iowa. "Hi" has been called one of the best onion men in the country.

Behrent

David Landreth, president of Bristol Seed Co., has liquidated his business in Bristol, Pa., and is now with Burpee Seed Company. Off to a new town and a new job is **Harlan Reif,** who has been promoted to National Supervisor of Food Processor Sales by Asgrow Seed Company. He'll make his headquarters in New Haven, Conn.

MARKETS...

TRENDS AND FORECASTS

Special Report

AMERICAN VEGETABLE GROWER, MAY, 1961

USDA ENCOURAGES MORE RESEARCH ON FROZEN FOODS. Recent recommendations for expanded research include improved methods of handling, transportation, and preservation treatments. Improving and maintaining quality in frozen foods is seen as essential to continued expansion of sales.

TREND TOWARD LARGER-SIZED, MORE SPECIALIZED FRUIT, VEGETABLE, AND POTATO FARMS CONTINUES. The main problem confronting growers as a result of this trend is capital. Single individuals as owner-operators of specialized farms are finding the combination of management and capital risk bearing increasingly difficult. Various integration arrangements, for aid in financing expansion to more efficient sized farms, are likely to become more prevalent in the future.

POTATO PROCESSING MAY BECOME MORE DECENTRALIZED. Processors are becoming concerned over the hazards of concentrating themselves too much in one area. This exposes the industry to the hazards of uncertain production. In looking into other areas for expansion processors are mainly concerned with potato quality, dependable supply, cost of production, shipping costs, taxes, labor and storage facilities in a new area.

FARMER'S SHARE OF THE FOOD DOLLAR 39 CENTS IN 1960. The farmer's share is relatively small, largely because of the homemaker's demand for more pre-packaged, processed, and easy-to-prepare food products. This adds more to the cost of food purchased

SWEETPOTATO GROWING INDUSTRY CONCERNED WITH DECLINING CONSUMPTION. More processing is seen as a possible means of stopping this trend. New products being developed include dehydrated instant flakes, sweetpotato chips, frozen diced and French fried products.

GOOD MARKET SEASON FOR MOST VEGETABLE CROPS EXPECTED. Markets for peas, sweet corn, tomatoes, asparagus, and beets look especially good. Vegetable canners in most areas are very optimistic about the coming season. Stocks-on-hand are down, markets are good, and contracting is about completed for most processors in northern areas.

CALIFORNIA TOMATO SITUATION UNCERTAIN. Growers are reluctant to contract. Uncertainty of harvest labor is the main reason. It appears that as much as $30 per ton will be offered to induce contracting. Last season's price was $22.50. California packers are seeking 150,000 acres to be planted—and harvested.

FOOD RETAILERS TO CONTINUE TO EXPAND. USDA predicts that large corporate chains will continue to absorb smaller ones and build newer stores. Another revolution taking place is that wholesalers no longer sell to retailer; rather they are selling through them. This is beginning a new era in competition and sales promotion.

USDA RECOMMENDS ONION ACREAGE CUTS. The main summer and fall producing states should cut 10%, others 5%. National Onion Association predicts, though, that this will not be enough to insure a favorable marketing situation this coming season.

TRANSFER OF FRUIT AND VEGETABLE MARKETING FUNCTIONS. Secretary of Agriculture Freeman has recommended transferring the supervision of fruit and vegetable marketing orders and agreements from the Fruit and Vegetable Division of AMS to the Assistant Secretary in charge of Agricultural Stabilization. Rumor is that this is paving the way for more efficient application of the "new farm program" to the fruit and vegetable growing industry.

CALIFORNIA GROWERS LOSE $5 MILLION ON LETTUCE. Labor troubles, poor markets, and low prices combined to give the Imperial Valley growers their worst season in many years. The word is that the unions are pulling out of the valley; braceros are coming back.

STATE NEWS

WASHINGTON, D.C.

Want Public Law 78 Extended

IN a show of unity among agricultural groups, Vegetable Growers Association of America joined American Farm Bureau Federation, Western Growers, and National Cotton Council in supporting extension of Public Law 78, governing Mexican labor program.

Robert Frederick, VGAA executive secretary, testified before the subcommittee on Supplies, Manpower, and Equipment of House Agricultural Committee. He read a prepared statement of VGAA president Charles M. Creuziger, who was unable to attend.

MAINE

It's a Whiz—Now

GROWERS in the Pine Tree state no longer have to struggle over the tedious job of record-keeping. It's being done from them electronically. The Maine Extension Service has developed an electronic punch card system for keeping farm records. Here's how the system works:

The grower enrolls his farm in the system through his county agent. He is then given basic data sheets and a code book. Every conceivable business transaction that could occur for a Maine grower has been given a code number. At the end of each day the grower jots down on the data sheet the day's transactions and accompanying code numbers.

When he has completed a data sheet, he mails it to University of Maine where the code is checked and then transferred to punch cards. At the end of each month the punch cards are placed in a sorting machine which sorts out, by item, all transactions the grower had during the month. From this sorting machine, the information goes into a tabulating machine which "writes out" each transaction on a large summary sheet giving the grower his monthly totals, whether in dollars, pounds, or bunches, as well as accumulative or "to date" totals.

At the end of the fiscal year, the year's total farm business is tabulated for the grower on a final summary sheet. For growers requesting such service, the Extension Service will also prepare a farm business analysis from the year's summary sheet. The analysis will be made on group basis so that information on individual operations cannot be identified.

NORTH CAROLINA

Promotion is Necessary

"THE time has come when growers and dealers alike must join together—not only in North Carolina but in Virginia, Georgia, and Louisiana, as a commodity group to promote and sell sweetpotatoes."

That was the advice Goerge Smith, assistant director of North Carolina extension service, gave growers attending the annual meeting of North Carolina Yam Association, held recently in Goldsboro.

Smith pointed out that sweetpotato consumption has dropped from 29 pounds per person to a little more than 7 pounds in 20 years. And it is continuing to decline on a fresh basis. He said the sweetpotato industry needs to promote and advertise its product the way the citrus industry advertises oranges.

E. K. Sanderson and his son, Joe, were named top growers in the state. They grew 434.6 bushels on a test acre on their Four Oaks farm. Nine growers won plaques for yields of more than 300 bushels per acre.

CALIFORNIA

Lull Before the Storm?

LABOR union organizational activity in California was at its mildest tempo in March and the early weeks of April and one reason for the lull in the labor strife was the scarcity of farm jobs. Throughout the Golden State less than 340,000 workers (last year California's monthly work force averaged 371,000 workers) were reported in farm jobs and about half of those were family workers.

The asparagus and strawberry harvests got underway in the Sacramento-San Joaquin Delta region and in southern California with no labor strife although the asparagus growers were keeping their fingers crossed.

Labor leaders were coy about plans for the spring and summer harvests but farm organizations were girding for full scale onslaughts when the heavy labor crops reach harvesttime.

Indications are that labor organizers are walking softly while the U.S. Congress and the State Legislature are in session to mollify fears the California food economy may be seriously endangered by strikes and labor unrest—fears that were agitated by the violence of organizational activity in the Imperial Valley lettuce harvest.

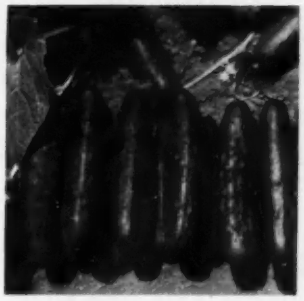
Some labor leaders were hopeful that California legislators might enact labor favoring legislation such as the proposed minimum farm wage law, calling for a floor of $1.25 an hour. But the best information from Sacramento indicates the proposal will not pass the State Senate committee level.

At least 30 private employment

PVGA CHOSE THESE MEN

These men will guide Pennsylvania Vegetable Growers Association in 1961. They are (seated, left to right) Paul Rowe, Strasburg, director; Harold Arnold, Vanderbilt, director; Rudy Grob, Lancaster, secretary-treasurer; Amos H. Funk, Millersville president; Fred Brehm, Dilltown, past president; (standing, l. to r.) Herman Hostetter, Sinking Springs; Fred Wright, Kingston; Burton Hetherington, Berwick; Donald Grimshaw, Lake City; Clair Allison, Hanover; George Weinschenk, New Castle, directors.

"First The Seed"



Jet-Mosaic resistant slicer

For May-June Planting

BEANS
Top varieties including the new *Harvester*

SWEET CORN
The early *Gold Crest, Seneca Dawn, Morning Sun,* and excellent main crop varieties

CUCUMBERS
Jet, Ashley, Marketer, and *Long Marketer*

MUSKMELONS
Super Market F_1 Hybrid, Harvest Queen, Delicious 51

Ask For
Price List Spray Materials

Send Today for Catalog

Letherman's

Dept. VG **Canton 2, Ohio**

NEWEST IMPROVED MODEL M-2

SCARE-AWAY

Thunderclap EXPLOSIONS Clears Fields of Birds...

Loudest and most reliable bird and animal scare device ever made. Operates on carbide or acetylene, no wick. Retail cost is low. Operates for less than 15c per day. DEALER INQUIRIES INVITED. Warehouse stocks in: San Francisco, New Orleans, Orlando, Chicago, Baltimore, and Greenville. No waiting for delivery.

WRITE FOR DEALER INFORMATION

REED-JOSEPH CO. Highway 1 North Greenville, Mississippi AV

Firm_____

Address_____

City_____ State_____

agencies will be in operation in California this season under grower sponsorship to offset the possibility strikes will bar referral of workers to farms by the State Department of Employment as they did in 1960. These private agencies will operate autonomously in various regions of the state but will exchange information on work and worker conditions. Several of these agencies were operated last year with fair success and offered a channel for workers to locate jobs without having to deal with state placement bureaus. Farm centers in a number of San Joaquin and Sacramento Valley counties are also organizing labor pools.

The State Department of Employment has improved, in the farm viewpoint, some of its techniques for screening workers so that willing and qualified workers—not strike organizers — will be referred to farms.

The lull in labor union activity along with higher tonnage prices and processor indications they will back growers in labor strife has stimulated tomato contracting. Latest reports indicate that about 80% of the required acreage has been signed by packers despite the general belief that Agricultural Workers Union will make its major move this season against bracero-manned farms.

NEW JERSEY

Help for Depressed Areas

SCHOOL children in the depressed areas of West Virginia will soon be getting potatoes with their free lunches. The potatoes are a gift of Holland and McChesney, a brokerage firm in Freehold, N. J.

Holland and McChesney gave 15,000 tons of U. S. No. 1 potatoes, worth $2000, to the U. S. Government for use in the free lunch program for school children in depressed areas. The gift was made in response to President Kennedy's announcement of his intention to relieve food shortages in economically stricken areas.

OHIO

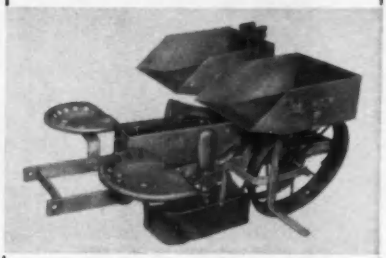
A Program of Their Own

OHIO Farm Bureau Federation has proposed its own program for solving migrant labor problems in the Buckeye state.

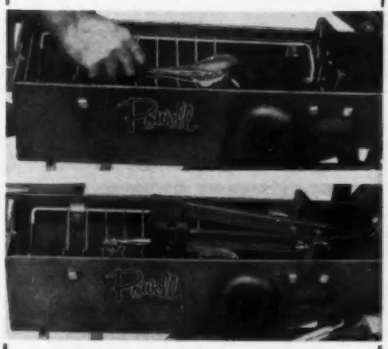
The six-point program includes support of the Governor's Committee on Migrant Labor, a state rest camp for the migrant workers in northwest Ohio, expansion of the school program for children of migrant workers, and some provision for hospitalization and medical care.

Also included in the proposal is an

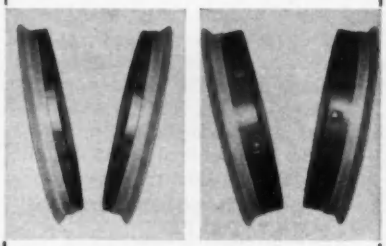
POWELL "42" TRANSPLANTERS



"42" Basic Unit
In 1 or Multiple Row Lift Types, 1 or 2 Row Pull Types. Also with Fertilizer Equipment.



Plant Pick-up Tray
Simply drop plants into the tray. The "42" spaces and waters them precisely.



Adjustable Packer Wheels
A Width to suit your Soil Conditions

• • •

Write for free Literature

• • •

POWELL MANUFACTURING COMPANY, INC.
Wilson, North Carolina

• MELONS • LETTUCE • CORN • CAULIFLOWER • CABBAGE • MELONS • LETTUCE • CORN • BEETS • TOMATOES • EGG PLANT • SQUASH • PEPPERS • CAULIFLOWER • CABBAGE • MELONS • LETTUCE • SQUASH • PEPPERS • CAULIFLOWER • CABBAGE • MELONS • LETTUCE • CORN • BEETS • TOMATOES • EGG PLANT • SQUASH • PEPPERS • CABBAGE •

GROWERS!

INCREASE YOUR PROFITS

Vegetables started in JACK POT peat moss pots grow faster, healthier, cost less to raise and are more profitable than plants started in any other pots!

Because plant and pot are planted together there is no transplant shock. Plants mature earlier and produce more. Handling costs are reduced, with substantial savings in time and labor. Wherever transplanting is desirable

Use JACK POTS.

You'll get best results with these enriched, sturdier peat pots. JACK POTS are tougher . . . easier to handle . . . than other peat moss pots. They contain just the right amount of nutrients for healthy growth. Less watering is required because JACK POTS retain moisture. Because they are porous, they also permit better aeration of roots. Light in weight, they cut shipping costs to a minimum. Available in square and round shapes, in Sturdi-Wall and Thin-Line construction, the 11 different JACK POTS constitute the

Most complete line of PEAT POTS

in the industry. There is a JACK POT for every growing condition.

Write today for free literature and price list.

JACK POT®

WILLIS-REYNOLDS CORP.

Lebanon 10, Ind.

• TOMATOES • EGG PLANT • SQUASH • PEPPERS • CABBAGE •

expansion of the annual worker plan as administered by the Farm Placement Division of Ohio Bureau of Unemployment Compensation, even though so far this has not met all the seasonal labor needs of Ohio growers.

Under the OFBF proposal, the health inspection of the living facilities of the migrant workers would remain under the jurisdiction of the local health departments.

John Walsh, executive director of President Kennedy's Committee on Migratory Labor, recently commended the Buckeye state, stating that Ohio was one of six states in the country doing an outstanding job in dealing with the problems of migrant labor.

WASHINGTON

Masto Heads Spud Group

NEW president of Washington Potato and Onion Growers and Shippers Association is Harry Masto, of Iseri-Masto Produce Company, Moses Lake. Masto was elected during the joint convention of WPOGSA and Washington Potato Commission, held recently in Yakima.

Sharing honors with Masto was Dave Stevens, a Quincy grower-shipper. Stevens was elected to Washington Potato Commission. The commission has tentatively approved a $45,000 advertising budget, providing for TV advertising, food page publicity, trade advertising, trade publicity, and a trade circular. The commission also approved a research budget.

NEW YORK

No Jets Wanted

GROWERS in Orange County are blasting off at a proposal by Port of New York Authority to build a giant jet airport in the heart of the county's rich muckland area.

How many muck growers in Middletown, Goshen, Florida, and Pine Island, N. Y., would be displaced by the airport is not known but the general feeling is that most of them would be forced to relocate or discontinue farming.

This muckland section grows about 7000 acres of onions each year, as well as lettuce, celery, and carrots. The land is extremely valuable for farming purposes, some of it producing three crops per year.

PACKAGING & MARKETING

Color Grading of Tomatoes

MORE accurate grading for tomatoes at processing plants—and a more equitable basis for payments to growers. That's what USDA predicts for the brand-new tomato grading system it has developed.

If the proposed system is adopted, the familiar U. S. No. 1 and No. 2 grades will be retired. Instead, growers and processors will get separate ratings for color and defects—and a better idea of the real value of their tomatoes.

The color of the tomatoes will be measured on a newly-developed electronic colorimeter. The device measures the actual color of the raw juice from a sample of tomatoes, and the reading comes out in terms of a "color index."

Defects will also be rated differently. The tomatoes will be classified A, B, C, or Culls, depending on the amount of defects and decay present. The inspector will calculate the amount of trimming the plant will have to do and report the "per cent usable" for the load.

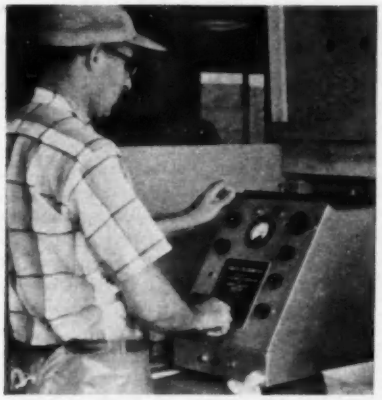
The proposed standards that would put these grading improvements to work have been developed by Fruit and Vegetable Division of Agricultural Marketing Service. Because the standards represent a radically new approach to grading, they are being circulated throughout the industry this year for comments.

The system will be used on a trial basis at some grading platforms this summer, and some processors hope to get enough data together to use in a pricing system based on the new grades.

Agricultural Marketing Service began looking for a better method of grading tomatoes several years ago. Its Federal-State Inspection Service grades more than a million tons of processing tomatoes every year, with the results being used as a basis for payments to growers.

If the new standards are adopted, the colorimeter will make life a good deal easier for the inspectors. Even with years of experience and replicas of tomato colors to refer to, an inspector has a hard time pinpointing the exact shade of red that separates No. 1 from No. 2. The colorimeter tells him the color automatically, and exactly, without need for separation into 1's and 2's.

The inspector feeds a sample of the tomatoes into a special juicer



Here, inspector "reads" sample of tomato juice on the newly-developed electronic colorimeter.

that extracts the raw juice and discards the skin and seeds. The raw juice is then "read" on the machine in terms of a color index.

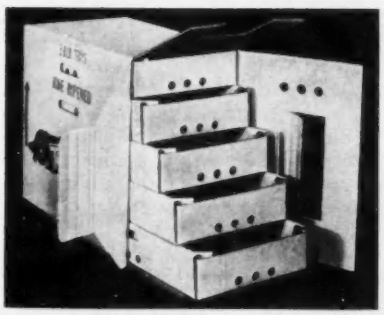
The color reading and the "per cent usable" will give a more accurate measure of the tomatoes' value, according to the inspectors. They don't think growers will miss the old "U.S. No. 1" a bit.—*Frank W. Betz, Agricultural Marketing Service, USDA.*

Color Sorting Machine

YOU can sort 450 tomatoes per minute with the new custom-designed automatic color sorting machine developed by Electric Sorting Machine Co., Division of Mandrel Industries, Inc., Houston, Texas.

An optical system in the machine scans the tomatoes and passes reflected light over a striped mirror that divides it between two photoelectric tubes—one for red, one for green. The proportion of red to green determines the color category of the tomato. Tomatoes are sorted into red, green, dark green, and pink. A fifth shade is also possible.

Delivery chutes for each of the color categories convey the tomatoes to packing stations.



EXTRA PROTECTION

Five-tray corrugated chest of drawers gives extra protection, provides excellent ventilation, and makes one convenient unit. Drayage, handling expenses can be cut as much as 80% with this unit. Trays as well as master wrap have stacking strength. Unit was designed by Owens-Illinois Paper Products Division (Toledo, Ohio) for shipping delicate vegetables, fruits.

MICRONIZED

TRI-BASIC COPPER SULFATE

Tennessee's Tri-Basic Copper Sulfate is micronized to give greater covering power – Guaranteed to contain 53% Copper as metallic.

Tri-Basic Copper Sulfate can be used in spray or dust form on practically all truck crops and many fruit crops in the control of persistent fungus diseases. It is compatible with other pesticides and gives the added advantage of correcting nutritional deficiencies where there is insufficient copper in the soil.

Insist on Micronized Tri-Basic Copper Sulfate

For samples or literature make request on your firm's letterhead.

TC TENNESSEE CORPORATION

612-629 Grant Building, Atlanta 3, Georgia

McDowell has the best d__n couplings in the **irrigation** business

These are the STEEL couplings—easily assembled, leak-proof, zincillated, reusable—the very best protection for your fragile aluminum pipe ends.

McDowell MANUFACTURING COMPANY

PITTSBURGH 9, PA.

Send your name and address on a postcard for name of your nearest McDowell dealer.

When writing advertisers please mention AMERICAN VEGETABLE GROWER

SPECIAL—AGRI-TOX
MASK & GOGGLES
$7.80 Complete
Mask $5.55 Goggles $2.25
Also complete line of equipment and insecticides.
Free Catalog
HUB STATE CO.
1255 N. Windsor, Indianapolis, Ind.

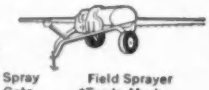
COMPACT, PORTABLE, NO PRESSURE TANK

*Sprayfoil
UTILITAIRE SPRAYER

New patented spray principle atomizes liquids completely, uniformly.

Amazing new spray penetrates deep, covers completely—controls insects, weeds and diseases. An airborne mist of chemicals gently envelops each leaf and stem—even in dense foliage. Chemicals cover more surface area—there's no wasteful run-off. Spray any emulsified liquids or wettable powders without clogging.

Spray Gate



Field Sprayer
*Trade Mark

Sprayfoil Corporation
222 W. 82nd St., Minneapolis 20, Minn.
Please send information on:
☐ Sprayfoil* Utilitaire Sprayer
☐ Spray Gate ☐ Field Sprayer
Name_____
Address_____

GREENHOUSE CROPS

Quality Control in Tomatoes

GREENHOUSE tomatoes picked vine-ripe or at "pink" stage of maturity are best for retail markets. Consumer studies by Dr. M. E. Cravens, agricultural economist at Ohio State University, reveal greenhouse vine-ripe tomatoes have more eye appeal, flavor, and quality than green-picked, artificially-ripened fruit.

Distance to market dictates the degree of fruit maturity for orderly marketing. Tomatoes for local markets can be vine-ripe at a full pink stage.

Research studies have shown the need for proper temperature control and handling of green-pink and pink tomatoes. An important factor in shipping both types is the degree of maturity of green and the ripeness of pink tomatoes. We now know the tomato has a definite temperature requirement. Proper control of temperature can regulate ripening, retard and control decay of the fruit.

Lacy P. McColloch, USDA plant pathologist, reported in 1958 that the type of decay on tomatoes reveals past growing conditions, handling practices, and shipping temperatures. Decay and poor ripening can occur when temperatures have been lower than 50° F. Chilling injury is a result of over-refrigeration, low but non-freezing temperatures. An example of chilling injury is Alternaria rot at stem scars. Mild chilling injury shows up on the retailer's shelf in slow, uneven ripening and extensive decay.

It is expected that greenhouse tomatoes will have more competition from field-grown vine-ripe and green-wrap shipped tomatoes. Vine ripes are not necessarily as seasonal as greenhouse crops. Market studies reveal greenhouse tomatoes at retail level are a good buy for the quality-conscious consumer. But, while quality of competitive tomatoes has steadily increased, studies show that quality of greenhouse-grown tomatoes has remained unchanged. This fact should alert greenhouse growers to evaluate their cultural and post-harvest practices.

In a market study conducted in 1958, Dr. Cravens found an overwhelming preference for greenhouse tomatoes over vine-ripe or repacks among the 150 families in Columbus, Ohio, included in the survey. Results showed 85% rated greenhouse tomatoes good, while 48% rated vine-ripe good, and 17% preferred tomatoes in repacked tubes.

How to help the retailer offer a better quality greenhouse tomato to the consumer has been investigated by Dr. E. K. Alban, horticulturist, Ohio Agricultural Experiment Station. He finds the general practice of picking at a green to pink-green stage of maturity is not the best. Shelf life or period of marketability of the tomato is shortened. Tomatoes harvested pink to pink-red, cooled to 55° F., can be held at this temperature through the market period of 10 to 15 days with minimum loss of quality. Tomatoes picked green to pink-green, allowed to ripen at 68 to 72° F., and cooled to 55° F. became very soft and often had a shelf life of less than five days. What is your harvesting practice?

Several post-harvest practices are recommended by Dr. Alban. Growers should harvest more frequently. If this cannot be done, grading as to stage of maturity is most essential. This will allow for optimum holding temperatures at each maturity grade and longer retail shelf life. Tomatoes at two or three levels of maturity in an 8-pound basket cannot be properly handled for maximum shelf life; the ripening temperature would be satisfactory for only one level of maturity.

Picked fruit should be transferred promptly from greenhouse to packing shed. This will remove excessive heat which promotes moderate ripening. Some growers have considered using a night picking shift to avoid the morning temperature rise in the greenhouse.

Growers should be aware of the factors that influence tomato quality. They are maturity of green tomatoes, stage of ripening of pink tomatoes, and proper temperature control. Not to be overlooked by grower or shipper is reduction of mechanical injury. Pressure bruising is the most hidden type of mechanical injury and a major cause of poor quality.

Competition of outdoor-grown vine-ripe tomatoes is considered to be the major problem of the greenhouse industry. We can expect quality of field-grown tomatoes to improve through better cultural and market practices. While the greenhouse tomato still leads in quality and consumer acceptance, Drs. Alban and Cravens urge that both growers and buyers learn the importance of maturity at harvest and holding temperatures in relation to a quality tomato for the consumer.—*Fred K. Buscher, Cuyahoga County (Ohio) Agent.*

PAY TO FUMIGATE?

(*Continued from page 9*)

Any new practice, including fumigation, on the Murata farm gets a thorough check-out before it is adopted.

This year most of the Murata plantings have been fumigated with a newer material—a mixture of two-thirds methyl bromide and one-third chloropicrin—which provides excellent weed control in addition to fungus and nematode control. The Muratas apply it at 225 pounds per acre. At this rate weed control is complete except for resistant weeds such as malva and clover.

The value of this added weed control is the main factor in their choice of the material containing methyl bromide. The Muratas figure that hand hoeing costs at least $150 per acre, and besides, as Ken Murata said, "Weeding time occurs at the same time that we need the whole crew for harvesting."

Ordinarily the fumigating material is injected into the soil by the full coverage method—8 inches deep with standards 12 inches apart. Bed fumigation is also being tried this year. In this case the chemical is injected about 6 inches deep through two chisels into pre-formed beds. This cuts the required amount of material in half.

Full coverage fumigation equipment consists of a 20 hp wheel tractor with the back tool bar carrying one row of chisel standards spaced 12 inches apart. Copper tubing is attached to the back of each chisel to carry the fumigant to injection position just behind the point of each chisel. On top of the tool bar all the copper tubes arise from a brass distributor block which regulates flow to an orifice in each tube.

The fumigating material is carried in a steel cylinder near the front of the tractor. A cylinder of nitrogen gas is used as a pressure source to force the fumigant from its cylinder through a gas pressure regulator and then to the distributor. The factors of pressure and tractor speed determine the rate of fumigant applied. Another specialized piece of equipment has been built for bed fumigation in which injection chisels are mounted on a front tool bar underneath a bed-shaping hood.

The Muratas realize the great importance of soil condition to the success of their fumigation. They first remove all old plants left over from the previous crop, chisel deeply or plow, and then pre-irrigate the soil thoroughly. The day before fumigation the soil is chiseled again. On the day of fumigation the soil is

DEPENDABLE, SAFE, LOW COST PLASTIC GREENHOUSE HEATERS

SUN-FLO HEATERS — LP or Natural Gas

68,000 or 33,000 BTU input
Rugged construction (aluminized steel) (no rust)
100% safety pilot-automatic control
Directional heat flow
Blower attachment available
Being used with outstanding results
Free greenhouse plans sent on request

Blower Attachment

WRITE
BURLEY BURNER CO., Inc.
2417 Nicholasville Pike Lexington, Ky.

TESTS SOIL IN SECONDS!

INCREASE YOUR CROP YIELD—
with low-cost portable
KELWAY SOIL TESTER . . .

easy-to-use, easy-to-read. **No complicated chemicals**, no time consuming tests. This revolutionary, scientific device gives **immediate, accurate acidity and moisture readings**. Used by farmers, agriculturists, nurserymen. Fully guaranteed! Price — only $29.50, complete with handy carrying case, pays for itself many times over in one season. Send to:

KEL INSTRUMENTS CO., Inc.
Dept. VG-19 P. O. Box 744
New Brunswick, New Jersey

ONE TIME JACK POTS

BETTER, STURDIER, PEAT POTS

Made from the finest horticultural peat moss with nutrients added which are released slowly to insure sturdy, healthy growth.

	ea.	Standard	Wt.	Azalea	Wt.
● 4 inches					
500 to 4,500	500	$29.75M	32#	$29.75M	32#
5,000 to 12,000		$27.75M		$27.75M	
● 3 inches		Square		Round	
1,000 to 9,000	1,000	$18.90M	37#	$14.90M	25#
10,000 to 24,000		$17.50M		$13.90M	
● 2½ inches		Square		Round	
2,000 to 28,000	2,000	$10.80M	36#	$8.60M	29#
30,000 to 72,000		$9.90M		$8.00M	
● 1¾ inches		Square			
2,500 to 27,500	2,500	$7.20M	28#		
30,000 to 72,500		$6.70M			

SHAPE HOLDING PEAT POTS

NEW!!! Lower Cost THINLINE

● 3 inches		Square		Round
1,000 to 9,000	1,000	$15.50M	34#	$13.30
10,000 to 24,000		$14.50M		$12.30
● 2½ inches		Square		Round
2,500 to 27,500	2,500	$8.10M	32#	$7.50
30,000 to 72,500		$7.60M		$7.00

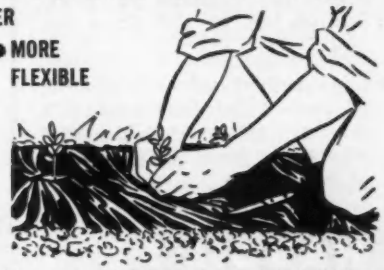
PRICES PREPAID on 150 Pounds or more anyplace within U. S. A., excluding Alaska

"Write for prices on carton of 100 pots and for quantity prices on regular packs".

VisQueen POLYETHYLENE FILM

● STRONGER
● MORE ECONOMICAL
● MORE FLEXIBLE

3'	x 1,000'	.0015 Gauge Black Only	$12.87
4'	x 1,000'	.0015 Gauge Black and Clear	17.16
5'	x 1,000'	.0015 Gauge Clear	21.45
4'2"	x 200'	.002 Gauge Clear	4.76
12'	x 200'	.002 Gauge Clear	13.70
3'	x 100'	.004 Gauge Clear	3.43
10'	x 100'	.004 Gauge Black and Clear	11.43
20'	x 100'	.004 Gauge Black and Clear	22.86
32'	x 100'	.004 Gauge Black and Clear	36.58
40'	x 100'	.004 Gauge Black and Clear	45.72
1'	x 300'	.006 Gauge Black Only	5.14
10'	x 100'	.006 Gauge Black and Clear	17.14
16'	x 100'	.006 Gauge Black and Clear	27.42
32'	x 100'	.006 Gauge Black and Clear	54.85
40'	x 100'	.006 Gauge Black and Clear	68.56
20'	x 100'	.008 Gauge Black and Clear	45.72



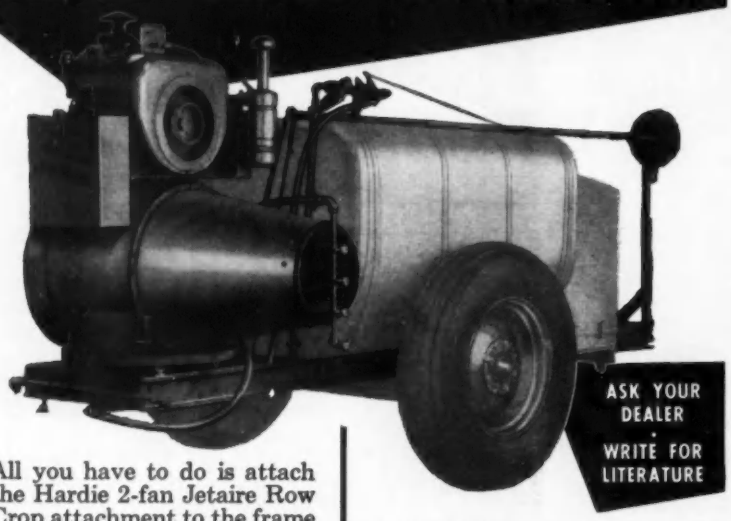
A few uses are: Mulching plants; green-houses; cold frames; fumigating soil; covers for silage pits, hay stacks, machinery, equipment, supplies; enclose work areas; vapor and moisture seal in building construction and cement work; flashing.

Order now or write for additional widths, lengths, and volume prices.

THE DAO CORPORATION P.O.Box 659 Terre Haute, Indiana

distinctive LABELS
HELP SELL YOUR PRODUCE
Manufacturers of Color Labels
FOR ALL FRESH OR CANNED FRUITS & VEGETABLES
WRITE WIRE OR PHONE
BRANDAU CRAIG DICKERSON CO.
304 10TH AVE. SO. NASHVILLE 3, TENN.
PHONE ALPINE 6-4151

NOW— YOU CAN MAKE YOUR OWN
ROW CROP SPRAYER



- All you have to do is attach the Hardie 2-fan Jetaire Row Crop attachment to the frame of any sprayer. It comes complete with a heavy duty air cooled engine and controls.
- Covers 14 to 20 rows of potatoes, tomatoes, etc. with a controlled blanket of mist. Sprays 100 to 120 acres per day.
- High velocity air—from two, 26 inch axial flow cast aluminum fans puts the spray where you want it, regardless of wind.
- Air discharge opening rotates through 220 degrees, giving absolute direction control and complete coverage on any kind of ground. You can spray wherever crops can grow.
- Easy reach controls at tractor seat.
- Adjustable air outlet in discharge housing provides control of air on plants close to sprayer.

HARDIE
AGRICULTURAL SPRAYING EQUIPMENT
SOLD AND SERVICED ALL OVER THE WORLD

OUR 63rd YEAR
1898-1961

The Hardie Mfg. Company, Inc.
Dept. AV
730 S. Main Street
WILKES-BARRE, PA.
Please Send Me
☐ Jetaire literature ☐ Have Salesman call
NAME_____
ADDRESS_____
CITY_____ STATE_____

very friable and moist to the surface.

One other step to success is the use of polyethylene tarping whenever methyl bromide is used in the fumigant. This is necessary in order to retain this highly volatile gas. The Muratas use 2 mil sheets 20 feet wide and about 300 feet long. The tarp is used to cover three adjacent passes of the fumigating rig immediately after injection. It is sealed by burying the edges 6 inches deep in a plow furrow that is made along the sides of the fumigated strip while injecting.

Several strips are fumigated and tarped per day depending on the size of the field. Twenty-four hours later one edge of the tarps is released and the tarps flipped over to seal freshly fumigated adjacent strips. With an experienced crew of six men the Muratas can fumigate 1 acre in an hour and a half, using seven tarps.

For bed fumigation a special piece of tarping equipment is attached to the back of the tractor. Fumigant and tarp are ingeniously applied in a single operation requiring only one man besides the tractor driver. By this method of covering one 40-inch bed at a time, 5 to 6 acres can be fumigated in a day. In either case, the Muratas delay planting for at least a week to thoroughly aerate the soil and thus avoid injury to the young plants.

Can growers of vegetables justify this type of fumigation? Perhaps so, if farming ground is at a premium near metropolitan areas and a severe disease condition exists for which there are no resistant varieties. Soilborne diseases can be controlled by fumigation, and part of the cost involved can be borne by the weed control advantage. The question of use, by vegetable growers, resolves itself to one of whether an excess of return can be expected over the cost of material and application. THE END.

Answer to YOU be the EXPERT!

(See page 32)

During the sunny days that followed removal of some of the hotents, the temperature under the remaining tents rose to above 90° F. causing the early blossoms to drop without setting fruit. This did not occur on the uncovered plants where air temperatures were not above 75° F.

Sam could have avoided this loss by tearing holes in the tents and providing ventilation. Under most situations, well ventilated frost protectors will improve early fruit setting and provide valuable wind protection.

New for *You*

Earlier, Heavier Crops

Naturally, growers want a plant protector that offers the greatest overall protection. One that has come to our attention is made of special plant protector paper which insures fast germination, sturdy growth, protection against frost, wind, rain, and

insects, and earlier and heavier crops. The F-D-S Titantents are economical, too, for no replacements are necessary. Bob Dameron at F-D-S Manufacturing Company, 1275 E. Franklin Ave., Pomona, Calif., will be delighted to rush complete information to you.

The Badger

Engineering know-how and experienced workmanship have gone into this rugged and durable professional tiller offered to the commercial vegetable grower. Powered by a 7-hp Kohler engine, the Badger provides

four travel speeds and a safety reverse. Travel speeds are ⅔, 1⅛, 2⅓, and 4 mph. It has a 14-inch rotor and a 16-inch tilling swath extendible to 37 inches for cultivating. Jerry Stumbras, of Bolens Products Division, Food Machinery & Chemical Corporation, 215 S. Park St., Port Washington, Wis., will see to it that you get, on request, full information.

NOW! CMW *Offers A New Concept In* **Fruit and Vegetable Processing**

5 Different CMW models available for sale, rental or lease.

- No Side Tanks Below Floor Level.
- Mechanical or Block Ice Refrigeration

The Hydro-Cooler

With amazing Fiber Glass interior which eliminates forever, leaks, rust, or rot. Absolutely impervious to water and chemicals. On ALL CMW Hydro-coolers at NO EXTRA COST!

Guaranteed to be:

- **The Lowest Priced**
- **Most Easily Installed**
- **Most Economical To Operate**

Priced From Only $2990.00 Complete

CLARKSVILLE MACHINE WORKS, Inc. East Main Street, Clarksville, Ark. Phone Pleasant 4-2022; Nite PL 4-2722

PLYAC* Spreader-Sticker

GIVES LONGER KILLING POWER

Yes, now you can get longer killing power from *all* your sprays by adding Allied Chemical's Plyac* polyethylene spreader-sticker.

Plyac spreader-sticker makes all sprays stick better and last longer, even in rainy weather when other sprays wash off easily. You can increase the effectiveness of insecticides, fungicides, even weed killers . . . stretch the time between sprays . . . do less re-spraying.

Plyac is easy to use and economical, too! Comes in convenient liquid form. May be added to both wettable powders and emulsifiable concentrates. Only 2 to 4 ounces are usually required for each 100 gallons of spray mixture.

For extra performance from *all* your sprays, use Plyac spreader-sticker this season!

*Trademark of Allied Chemical Corporation

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

GROWERS OPPORTUNITY PAGE

Only 25¢ a word for one-time insertion; 20¢ a word per month for two-time insertion; 15¢ a word per month for four times or more. CASH WITH ORDER. Count each initial and whole number as one word. Copy must be in the 15th of the second month preceding date of issue. You can use our companion publication, AMERICAN FRUIT GROWER, in combination with AMERICAN VEGETABLE GROWER, for only 10¢ a word more.

AGENTS WANTED

WANT EXTRA MONEY? TAKE BIG PROFIT orders in your spare time accepting subscriptions for AMERICAN VEGETABLE GROWER. Send for free credentials and tested-method sales kit. No obligation. Write today. AMERICAN VEGETABLE GROWER, Box 109, Willoughby, Ohio.

BOOKS

DRUG MEDICINES DISAPPOINT, DISILLUSION. Why defeat nature's spontaneous recovery efforts? New 25¢ book, MEDICINES OF NATURE describes seven universal curatives freely available everywhere. M-PRESS, Coalmont 143, Tennessee.

BERRY BOOK: "THIRTY YEARS OF BERries." Raspberries and Strawberries. 84 pages. Price $1.00 P'paid. ROY TURNER, 1525 S. Livingston St., Peoria, Ill.

VEGETABLE GROWERS—SEND TODAY for copy of our free leaflet, "Books of Interest to Leading Vegetable Growers". MACFARLAND PUBLICATIONS, P. O. Box 540-A, Westfield, New Jersey.

POTATO GROWERS—JUST PUBLISHED 1961 American Potato Yearbook. Crammed with important facts. Send $2.00. Complete Volume 1950-1961, $16.00. AMERICAN POTATO YEARBOOK, Box 540-A, Westfield, New Jersey.

TOMATO GROWERS—STILL AVAILABLE a few copies of our 1959 edition at special price of $1.00. First come, first served. AMERICAN TOMATO YEARBOOK, Box 540-A, Westfield, New Jersey.

BRUSH & WEED KILLERS

KILL BRUSH AT LOW COST WITH AMAZing R-H BRUSH RHAP. Will not injure grasses, grains; not poisonous. For free information, write REASOR-HILL CORPORATION, Box 36AV, Jacksonville, Arkansas.

KILL SUBMERSED WATER WEEDS WHICH foul up motor propellers, tangle fishing gear, with R-H WEED RHAP-20. Granular 2,4-D. Inexpensive, easy to use, sure results. For free information, write REASOR-HILL CORPORATION, Box 36 AV, Jacksonville, Arkansas.

MR. CORN FARMER: CONTROL BROAD leaved weeds and grasses (crab grass, fox tails) with R-H WEED RHAP-20, Granular 2, 4-D. For free information write REASOR-HILL CORPORATION, Box 36AV, Jacksonville, Arkansas.

BUSINESS OPPORTUNITIES

FREE PICTURE FOLDER, "HOW TO MAKE $3,000 Yearly, Sparetime, Raising Earthworms!" OAKHAVEN-25, Cedar Hill, Texas.

MAKE BIG MONEY RAISING RABBITS FOR us. Information 25c. KEENEY BROTHERS, New Freedom, Penna.

A SECOND INCOME FROM OIL CAN END your toil! Free book and oil-fld maps! No obligation. NATIONAL PETROLEUM, Pan-American Bank Bldg-FV, Miami, Florida.

FERTILIZER INJECTOR

DRAGON FERTILIZER INJECTOR FITS your irrigation system. Enjoy spectacular results on vegetables. DRAGON ENGINEERING CO., 626 McClary, Oakland 21, Calif.

FOR SALE—EQUIPMENT & SUPPLIES

USED SPRAYERS TAKEN IN TRADE ON new John Bean equipment. 2 Buffalo Turbine air machines and 2 hydraulic, 600 pound pressure machines. One engine powered and one PTO row crop. Both in excellent condition. Reasonable. KWH mist blowers, FMC graders, washers, packing house equipment. Shur-Rane Sequa-Matic irrigation, power and hand pruning tools, supplies, parts and service. NORTHEASTERN OHIO'S JOHN BEAN DEALER. LANPHEAR SUPPLY DIVISION OF FOREST CITY TREE PROTECTION COMPANY, 1884 S. Green Road, Cleveland 21, Ohio. Phone EV 1-1700.

WATER SUPPLIES, INC. DEALERS FOR Myers power sprayers. Largest stock of new and used power spraying equipment in Ohio. Let us know your needs. WATER SUPPLIES, INC., P. O. Box 547, Ashland, Ohio—Phone 21565.

JOHN BEAN SALES AND SERVICE, SINCE 1949. Sprayers—irrigation—graders—potato harvesters. WITMER IMPLEMENT SALES, Box 146, Columbiana, Ohio.

1954 FARMALL M AND PLOW, 2500 FIELD crates, 18" produce grader, including waxer. ROBERT McCARTNEY, Shreve, Ohio.

GET MORE BUSINESS WITH ATTRACTIVE outdoor signs. They're easily made with Signcraft Letters. Permanent. Inexpensive. Proven nation wide. NORTHLAND PRODUCTS. Route 22-282 Rockland 25, Maine.

JOHN BEAN SPRAYERS, KWH MIST-BLOWers, Howard Rotavators, Tew and FMC Packing House Equipment. GEORGE ACKERMAN, 3310 Corduroy Rd., Toledo 5, Ohio. Phone Curtice 6-7545.

HI-BOY, FERGUSON TRACTOR ON STILTS with 6-row Messinger duster. ROBERT MANCINI, 33190 23 Mile Road, New Baltimore, Michigan. RAymond 5-7193.

BRUNER VEGETABLE TOPPER UNITS and harvesters have no comparisons. Harvests onions, carrots, red beets. Send for illustrated and descriptive folders. R. G. BRUNER MFG. CO., 22516 Hoover Rd., Warren, Mich.

FOR SALE: MODEL 30 JOHN BEAN POtato harvester with bulk loader and deviner harvested thirty acres priced 25% off. FLOYD MYERS, RR1, Waterloo, Indiana.

60 H.P. ECLIPSE GAS FIRED BOILER 125 P.S.I. (packaged type) and return system, 4 years old, like new. A. G. FEICK, 253 Jackson Street, Sandusky, Ohio.

POTATO HARVESTER JOHN BEAN 2-ROW number 60 powered square rod digger shoe for muck. With new conventional digger blade. JAKE BRUGGEMAN, Canandaigua Road, Clayton, Mich.

HAND TRANSPLANTER—SETS VEGETAble and strawberry plants. $4.95. HOCKER'S, Grass Lake, Michigan.

HAIR CARE

GRAY HAIR LIQUID IMPARTS COLOR TO gray or faded hair $2.50. Rotor clips unwanted hair in nose and ears $1.15. Postpaid. FENDRICK'S, 114 North 6th Street, Allentown, Penna.

HELP WANTED

MAN WITH KNOWLEDGE OF TRUCK farming for sales and warehouse work. Limited traveling. Good opportunity with 50 yr. old midwest company. Write for complete details. Please include age and farming experience. M. IWEMA, 9846 So. Clifton Park, Evergreen Park 42, Ill.

ICING EQUIPMENT

COMPLETE LINE ICE EQUIPMENT AND tools including Crusher Slingers, Refrigerated Storages, Bags, Conveyors, Corn Icers, Crushers, Etc. Free Catalog. INDEX SUPPLY COMPANY, 612 Indiana Ave., LaPorte, Indiana.

MISCELLANEOUS

BANANA PLANT, GROWS ANYWHERE—Indoors, outdoors. $1.50. Postpaid. SOPHIA SULEN, Ladylake, Fla.

SUBSCRIBE TO GOVERNMENT SURPLUS weekly, lists all sales. Buy Jeeps, trucks, boats, tents, tires, etc. direct from government. Next 10 issues, $2.00. GOVERNMENT SURPLUS, Paxton, Illinois.

WINE—BEER—ALE RECIPES. FOR HOME use. Send $1.00 to HOWE, Box 9031, S. Lansing 9, Michigan.

BUSHEL GOURDS 12 SEEDS $1.00. DIPPER gourds 20 seeds $1.00. JOSEPH HOWARD, Route 1, Hartford, Ky.

FREE RAIN BONNET WITH 10 PASTEL ball pens, 10 refills, 10 pencils, sale price $1.00. FREE lustrous combs, calendars, specialties. WEBB SPECIALTIES, 606-FG Gaston, Raleigh, North Carolina.

FREE PLASTIC PLANT CATALOGUE. CREate beautiful flowers and plants at home for fun and profit. SIDNEY'S, Dept. HC, Mineral Wells, Texas.

OF INTEREST TO WOMEN

SEW APRONS AT HOME FOR STORES. No charge for material to fill orders. In our fifth successful year. Write: ADCO MFG. CO., Bastrop 63, Louisiana.

PLASTIC FREEZER CONTAINERS, SQUARE pints, $9.95; quarts, $15.00 per hundred, postpaid. Sample pint, 25¢. OXBORO, Box 7031 BP, Minneapolis 11, Minn.

HOME TYPING: $65 WEEK POSSIBLE. DEtails, $1. TREASURY, 709 Webster, New Rochelle AF-5, N.Y.

DRESSES 24¢; SHOES 39¢; MEN'S SUITS $4.95; trousers $1.20. Better used clothing. Free catalog. TRANSWORLD, 164-CA Christopher, Brooklyn 12, N. Y.

PERSONALS

PRACTICE DAILY BIBLE READING.

PLANTS AND SEEDS

TOMATO PLANTS — **CABBAGE PLANTS**
Virginia State Inspected
Cabbage, Broccoli, Cauliflower
Ready Now
Tomato, Pepper, Sweet Potato
Ready May 20
TOP QUALITY — PROMPT SERVICE
Write or telephone for catalogue and prices.
J. P. COUNCILL COMPANY
LOgan 23546 — Franklin, Virginia
"Virginia's Oldest and Largest Growers"

CERTIFIED TOMATO, PEPPER, CABBAGE, onion, eggplant; field grown, healthy, vigorous, full-bearing plants. Write for free catalogue—price list. Satisfaction guaranteed. M. H. EVANS AND SONS, Dept. 8, Ty Ty, Georgia.

Please Write Today For Our Spring 1961 Vegetable Plant Contract Prices to
VEGETABLE MARKET GROWERS
of
• CABBAGE • ONION • TOMATO • PEPPER
• SWEET POTATO PLANTS
FARRIER PLANT FARMS
Box 4787, Omaha, Texas

MARY WASHINGTON ASPARAGUS PLANTS. State inspected. 100 plants $6.50 postpaid. 2 years old. RUDOLPH SZEWCZYK, Paw Paw, Michigan, Route 3.

ONAWAY SEED POTATOES: HIGHEST yielder high quality; early. Certified Merrimacks; highest chipping quality. Certified Sebagoes. NORTHMICH SEED FARM, Elmira, Michigan.

STRAWBERRY PLANTS — BLAKEMORE, Dunlap, Dixieland, Armore, Premier, Aroma, Tennessee Beauty, Robinson and Pocahontas. 100—$2.00. 200—$3.00. 500—$6.50. 1,000—$12.00. EVERBEARING — Gem, Superfection and Streamliner. 50—$2.00. 100—$3.00. 200—$5.00. 25 Thornless Boysenberries $2.00. 25 blackberries, youngberries or dewberries $2.00. 25 Cumberland (black) or Latham (red) raspberries $3.00. 10 Concord grapes $3.00. 6 Champion gooseberries $2.00. 12 Victoria rhubarb $2.00. 3 Canada red $2.00. 25 asparagus $2.00. All postpaid. Fresh plants, full count and live arrival guaranteed. Complete price list with planting instructions free. IDEAL FRUIT FARM AND NURSERY, Stilwell, Oklahoma.

VEGETABLE PLANTS
Wholesale—Retail
CABBAGE, ONION, EGGPLANT, PEPPER & TOMATO PLANTS
All Varieties Certified Plants
Certified Georgia Red SWEET POTATOES
Plants and Seed
Write—Phone—Wire
P D FULWOOD COMPANY
Dept. AV-5, TIFTON, GEORGIA
Phone 293, Day or Night
52 Years Satisfying Service. Growing Stations at Tifton, Georgia and Palatka, Florida.
Shipments by Railway Express, Mail, Airplane or in Truck Lots. Contract ahead on large quantities to assure you variety of plants when you want them. Write for Colorful Calendar Catalog giving Vegetable Plant Varieties.

TOMATO PLANTS, BURPEE'S BIG BOY, Big Early and Moreton Hybrid 12—$1.40; 50—$4.00; 100—$7.00. Rutgers, Homestead, Marion 25—$1.00; 50—$1.75. Mossed, postpaid. PETRIE'S PLANT FARM, Route 1, Hopkins, S. Car.

BEAUTIFUL GRAY IRIS WITH BLUE falls, also daylilies. Nice bulbs. Choice of 10, $1.00 MILDRED LOWMAN, Route 5, Ellijay, Ga.

VEGETABLE PLANTS

Certified by State Inspection. Open field-grown CABBAGE, ONIONS, TOMATOES, PEPPER, COLLARDS, BROCCOLI, BRUSSELS SPROUTS, CAULIFLOWER, EGGPLANTS, AND SWEET POTATOES. We plant the best strains of seed in leading varieties. Write for free catalog of prices and descriptive varieties.

TEXAS PLANT FARMS

Jacksonville Texas

POT LABELS (Plastic)

"LOWER PRICES" FREE SAMPLE AND folder on E-Z Rite plastic pot labels. MASTER PRODUCTS CO., Montague, Michigan.

ROTARY TILLERS-SALES, SERVICE

HEAVY DUTY AGRIA TILLER, 36" WIDTH. Diesel motor, self-starter, power turning. Other attachments available. Dealerships open. GORMSEN TILLER, Strongsville, Ohio.

SEPTIC TANKS, CESSPOOLS

SEPTIC TANKS, CESSPOOLS, OUTDOOR toilets. Keep clean and odorless with Northel Septic Tank Reactivator. Bacterial concentrate breaks up solids and grease—prevents overflow, back-up, odors. Regular use saves costly pumping or digging. Simply mix dry powder in water—flush down toilet. Non-poisonous, non-caustic. Six months supply only $2.95, postpaid (money-back guarantee of satisfaction), or rush postcard for free details. NORTHEL, FB 5, Box 1103, Minneapolis 40, Minnesota.

SITUATION WANTED

NEED WORKERS ? ? ? HARD WORKING farmers and ranchers (men only) from central Mexico want permanent year around jobs in U.S.A. Allow 5 to 6 months for arrival of workers, for free details, write: S. D. CORONA (AFVG), Apartado 184, Guadalajara, Mexico.

SURPLUS VALVES-PIPE FITTINGS, ETC.

JULIUS MEL, DEALER IN SURPLUS valves, pipe fittings and miscellaneous equipment. We save you money. Try us. 3582 Bendemeer, Cleveland 18, Ohio. Phone FA 1-3174.

SWEET POTATO PLANTS

NANCY HALL, YELLOW YAM, VELVET Reds, Bunch Parts, Redgolds, Allgold, Ga. Reds. Early Parts and Copper Skin. 200—$1.50, 500—$2.50, 1,000—$4.00, 10,000—$35.00. Quick shipment. THRIFT PLANT FARM, Gleason, Tennessee.

PORTO RICANS, NANCY HALLS, BUNCH Ports, Copperskin Gold Rush. All Golds. Good strong plants, treated for prevention of diseases. 200—$1.00; 500—$2.00; 1,000—$3.25; 5,000—$15.00. Quick shipment. GLEASON PRODUCE, Gleason, Tennessee.

SWEET POTATO PLANTS

PORTO RICOS—NANCY HALLS—"BUNCH"
ALL GOLDS—RED GOLDS—GOLD RUSH

200—$1.50 500—$2.50 1000—$4.00

FREE "GROWING POTATOES EVERYWHERE"

STEELE PLANT COMPANY
GLEASON, TENN.

WANTED TO BUY

HOSEBOYE MOTORIZED HOSE REEL IN operating condition. State price. CHARLES CROSS, Box 166, McNeil, Arkansas.

WATCH REPAIR

WATCHES EXPERTLY CLEANED AND REpaired. $3.95 and $4.95. Fast, reliable service. Satisfaction guaranteed. E. FREDENBURG, Route 9, Box 1120, Battle Creek, Michigan.

WILLS

MAKE YOUR OWN WILL! IMPORTANT! Two Will Forms and "Instructions Booklet", $1.00. NATIONAL, Box 48313P, Los Angeles 48, Calif.

GRADING EQUIPMENT

50% of new cost. 36" snap bean line, levelers, sorting, air blast, used 20 hours. 40 ft., 36" vegetable sorting belt, nearly new. 18" Washer, Waxer, Sizer, good condition.

NORTHERN OHIO GROWERS ASSN., Elyria, O.

MORE FOR YOUR MONEY

SELLING TIRES ALL OVER THE WORLD FOR OVER 39 YEARS

Tractor, Grader, Implement, Airplane, Farmwagon and Wheelbarrow Tires Available. Satisfaction Guaranteed. Thousands of New and Used Army Surplus Tires in Excellent Condition.

USED TRUCK TIRES

Excellent Condition Grade A

650 x 16	6 Ply	$ 8.50
700 x 16	6 Ply	10.00
750 x 16	8 Ply	12.00
700 x 17	6 Ply	12.00
750 x 18	8 Ply	15.00
600 x 20	6 Ply	12.00
650 x 20	8 Ply	12.00
750 x 20	10 Ply	17.50
825 x 20	10 Ply	20.00
900 x 20	10 Ply	20.00
1000 x 20	12 Ply	25.00

ARMY TYPE EXTRA HEAVY TREAD

Good for mud & rough going. Perfect condition. Used

750x16— 6 ply Jeep	$17.50
750x20— 8 ply and tube	17.50
900x16— 8 ply and tube	17.50
900x20—10 ply and tube	25.00

TAKE OFFS—90%

Heavy Army Tread

750 X 20 $25.00 includes the tube

SPRAYER TIRES

1600 x 16	14 Ply New Nylon	$77.50
1700 x 16	12 Ply used excel.	35.00
1300 x 24	8 Ply used excel.	35.00

SPECIAL OFFER!

FRESH STOCK. Not surplus. Good for Mud & Heavy Loading.

NEW ARMY TREAD 1st

600 x 16	6 Ply	$22.50
700 x 16	6 Ply	28.00
700 x 15	6 Ply	28.00
900 x 16	8 Ply	45.00
750 x 20	8 Ply	37.50
825 x 20	10 Ply	57.50
900 x 20	10 Ply	62.50

New Regular Tread Specials

825x20	10 ply 1st	Mfg.	$59.50
900x20	10 ply 1st	Mfg.	69.75
1000x20	12 ply 1st	Mfg.	88.00
1000x22	12 ply 1st	Mfg.	92.50
750x15	6 ply 1st		24.50
750x17	8 ply 1st		40.00
750x20	8 ply 1st		45.00

USED TRUCK TUBES

650x20 700x20 750x20 750x16 **$2.50**

AIR TIGHT Larger Sizes $4.00

NYLON AIRPLANE TIRES FOR CONVERSION

WAGON SPECIALS — FULLY GUARANTEED

All tires sold without wheels will fit on reg. drop center wagon wheels

REMEMBER, when ordering wheels specify no. of bolts, bolt circle and hub dimensions.

650 x 14 Ply nylon used tire tube and new wheel .... 5 ton per tire $18.50

650-700 x 15 16 Ply nylon new tire and new tube .... 6½ ton per tire 25.50

700 x 16 16 Ply nylon new tire and new tube .... 7 ton per tire 25.50

700 x 16 16 Ply nylon new tire, tube and wheel .... 7 ton per tire 30.00

750 x 16 12 Ply nylon used tire and new tube .... 5 ton per tire $20.00

750 x 16 12 Ply nylon used tire, tube and new wheel .... 5 ton per tire 27.50

750 x 16 12 Ply nylon new tire and new tube .... 5 ton per tire 30.00

750 x 16 12 Ply nylon new tire, tube and new wheel .... 5 ton per tire 36.50

We have practically every known tire in stock. Please write for sizes not listed.

GANS SURPLUS TIRE CO.

Mail Orders Filled Send Check or M.O. No C.O.D.

Dept. B 1003 Broadway Chelsea 50, Mass.

Phone Turner 9-2025 9-2078

DEALERS WANTED

SAVE UP TO 50%

on NATIONAL BRANDS of Watches, Binoculars, Luggage, Electric Razors, Housewares, Etc.

SEND $1.00 FOR MONEY SAVING DISCOUNT CATALOG & GENUINE LEATHER GIFT WALLET

FIDELIS WHOLESALERS

OPERATED BY TOTALLY DISABLED WORLD WAR II VETERAN

Niagara Square Station
P.O. Box 224-AVG, Buffalo, New York

When writing advertisers please mention AMERICAN VEGETABLE GROWER

IF YOU HAVE HERNIA

You can be FREE from TRUSS SLAVERY

Surely you want to THROW AWAY TRUSSES FOREVER, be rid of Hernia Worries. Then Why put up with wearing a griping, chafing and unsanitary truss. For there is now a new modern Non-Surgical treatment that is designed to permanently correct hernia. These Non-Surgical treatments are so certain, that a Lifetime Certificate of Assurance is given.

Write today for our New FREE Book that gives facts that may save you painful, expensive surgery. Tells how non-surgically you may again work, live, play, and enjoy life in the manner you desire. There is no obligation. **Excelsior Medical Clinic, Dept. H8628, Excelsior Springs, Mo.**

Why are more and more growers planting Alpha tomato seeds?

Alpha specializes in breeding and hybridizing tomato seeds.
That's why tomato growers receive better service, seed quality and choice of varieties—in both standard and hybrid seed.
You can be sure with

ALPHA SEEDS

W. V. Clow Seed Co.
Dept. AV-5
1401 Abbott St.
MArrison 2-9003
Salinas, California

USED GREENHOUSE GLASS

Used 16x18-in. glass. $3.00 per box. F.O.B. Bloomington, Ill. Minimum order, 5 boxes. Cash with order unless credit established.

Call or Write—

W. S. ROUGH SALES CO.

115 Conley Circle; Bloomington, Ill.
Phone: 824-3990

VEGETABLE CULTIVATE with the best

KIRBRO designed tooth for Close-Clean work...will work Deep-Fast and Not Injure Roots...can cultivate and Fertilize in one operation. The KIRBRO designed Tool Bar made for easy two to four row cultivating... Quick adjustment... Easy Set Up... For All Tractors for the cleanest and finest cultivating

TRY THE KIRBRO GUARANTEED TOOL

KIRBRO CO. 131 SCHLEY ST. NEWARK 8, N.J. WAverly 3-4635

A Free Choice

HERBICIDES or humans. It may appear quite harsh to compare chemicals to people, but this is the choice which vegetable growers face today. "Should I hire help to control weeds or should I hire a chemical to control my weeds?"

Norman J. Smith, associate county agricultural agent of Nassau County, L. I., New York, suggests that we take a good look at our weed problem in this new chemical era and try to analyze it so that we can make some profitable management decisions.

Weed-killing chemicals are hired to do a specific job which was once accomplished by hand or hoe or the mechanical hoe. Today, weed control is a *management* job where the farm manager has to do some serious thinking and evaluating. A grower might ask himself these questions as he looks forward to the approaching growing season.

1) Should I use a selective chemical weed killer to keep the weeds out of a particular crop?

2) Should I do like I did last year, hoe and cultivate, hoe and cultivate, hoe and cultivate?

3) Should I try to get by with just cultivating more often and closer and eliminate hoeing?

4) Maybe there won't be as many weeds this year and I won't have to worry about it. (Lucky.)

Let's say that you decide to grow the crop the way you always have and separate the weeds from the crops by hand. If the market price for your vegetable is low, you know that you're not going to make any more money than you did last year when it was low.

Let's face the fact that as an individual grower you have little control over market price. Eventually, this may change, but at present the only way to obtain immediate results is to economize on your production costs.

The efficiency of your hired help who hoe or separate weeds from crops by hand doesn't increase significantly in any one year. In fact, the man who operated a hoe 2000 years ago could hoe just about as fast as a man can hoe today.

As for a tractor cultivator or a mechanical hoe, this device has its advantages and disadvantages. It is more efficient for reducing weeds but also crop yields. We can cut off the roots or the life line of our agriculture at about 5000 times the speed (estimated) if we use a tractor in place of a hoe.

Vegetable growers reduce yields with a cultivator probably faster than by any other method known to modern man. We get as close as we can to the crop and here we have one great advantage: the ground covers the roots so that we don't have to watch the murderous activity as the front teeth tear off and destroy the plant roots. Is this efficiency?

Many growers and some researchers tell us that the soil gets too hard if we don't cultivate and the plants don't get enough air. Take a good look at this idea.

The soil gets hard and short of air because there isn't enough organic matter and air spaces in the soil. When you cultivate, you mix extra air into the soil, that is, temporarily, until you crush it out again with the tractor wheels.

If your vegetable soil gets hard and compact, remember that a cultivator is not a machine which increases organic matter. The organic matter is increased by adding crop roots, tops, or manure to your soil.

Increasing the organic matter of the soil is not old-fashioned; it is a much more modern and beneficial practice than cultivating a crop five times and attempting to stir air into the soil mechanically.

A question we might ask is this one: Is it cheaper to use chemical weed killers compared with other methods which are available to control weeds? It depends. Ask yourself these questions:

1) How much does it cost to eliminate weeds by hand or by a cultivator?

2) How much will your yield and quality be increased if you keep the crop free of weeds?

3) How much does the weed killer cost compared to your hand or mechanical method?

4) How effective is the weed killer? Does it kill only a portion of the weeds? How long will the weeds be controlled?

5) How safe is the weed killer? Will I get a better total yield or will I get injury and reduce the yield?

6) Can I learn how or can I teach my men how to use the new weed killer according to directions?

Many vegetable growers have faced these decisions and are using weed killers profitably. These men are getting more crops for each dollar spent and their vegetable operation is keeping up with the competitive times.

One man with a hoe might make you $20 a day; but one man with a weed killer could make you $2000 in one day. This is not a fairy tale, this is the vegetable growing business today. The ironic thought here is that the same man who knows how to run the hoe can be taught how to use the new weed killers.

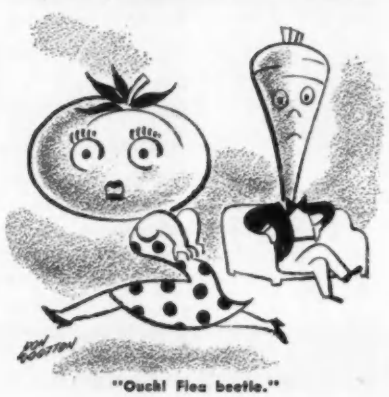
If you are not using weed killers now, think it over. If you have any questions, call your county agricultural agent. He is one of your best qualified hired men. He will be more efficient only if you are more efficient. In our competitive vegetable growing business today, efficiency is the road to the future if we want to stay in the business. If we remain inefficient, this is the shortest and quickest route for OUT.

QUOTE-OF-THE-MONTH

"Either growers must join together to form their own effective marketing organizations, or they must affiliate with strong marketing firms . . . Many small sellers are no match for concentrated buying."

—S. R. Smith, director, Fruit and Vegetable Division, USDA

VEGETABLE CONVENTION



"Ouch! Flea beetle."

Coming Next Month

- Iowa's Chris Hansen Irrigates Round the Clock
- Potato Farming Is Not All Luck
- How Green Are Our Subdivisions?
- Dividends from Irrigation

recognize this pest?

You would know him in an instant if you found him chewing your bean plants this season—you guessed it—Mexican Bean Beetle. • If you would rather not see him at all—better get new, economical ethion. Economical because it gives you control of all the important bean insects *plus* highly effective control of mites, as well. Why pay for a separate miticide—ethion does both jobs. • As a miticide, ethion combines fast initial kill with long residual action. As an insecticide, it is effective against a variety of insects including Mexican Bean Beetle, bean leaf beetle, and lygus bug on beans. And because it kills both mites and insects, ethion gives you positive control of your principal bean pests at minimum material and application cost. • See your dealer for complete details. He'll tell you how well it worked in your area last season . . . how you can make it add to your profits this year.

ethion

TECHNICAL CHEMICALS DEPARTMENT • NIAGARA CHEMICAL DIVISION • FOOD MACHINERY AND CHEMICAL CORPORATION • MIDDLEPORT, NEW YORK

Harvester by Asgrow

Growers, Shippers, Buyers agree . . .

heavy yields, field performance, fancy quality, top-of-market prices make Asgrow's Harvester the hottest new variety to hit the snap bean deal in years!

Order now for your 1961 planting. And be sure to specify ASGROW!

Asgrow Seed Company
New Haven 2, Conn.

Atlanta 2, Ga. • Mechanicsburg, Pa.
Oakland 4, Calif. • San Antonio 11

Asgrow Seed Company International, Milford, Conn.
The Kilgore Seed Company. Plant City, Fla.